

=> file reg

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=> file hcaplus

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FILE COVERS 1967 - 12 Jun 2000 VOL 132 ISS 25
 FILE LAST UPDATED: 11 Jun 2000 (20000611/ED)

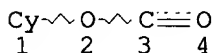
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 substance identification.

This file supports REGISTRY for direct browsing and searching of
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Now you can extend your author, patent assignee, patent information,
 and title searches back to 1907. The records from 1907-1966 now have
 this searchable data in CAOLD. You now have electronic access to all
 of CA: 1907 to 1966 in CAOLD and 1967 to the present in HCAPLUS on STN.

=> d que

L1 SCR 2043
 L2 STR



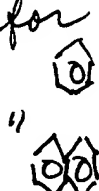
NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 GGCAT IS SAT AT 1
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RSPEC I
 NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L3 11440 SEA FILE=REGISTRY SSS FUL L2 AND L1
 L5 4491 SEA FILE=REGISTRY ABB=ON L3 AND 46.150.18/RID
 L6 61 SEA FILE=REGISTRY ABB=ON L3 AND 591.49.57/RID

KATHLEEN FULLER EIC 1700 308-4290

satuated ring (s)
(had to ignore the possibility of an alkenyl group + stick to satuated rings)
11, 440 structure
↓
6899 structures without these rings
↓
ring identifier for


L7 6899 SEA FILE=REGISTRY ABB=ON L3 NOT (L5 OR L6)
 L8 4981 SEA FILE=HCAPLUS ABB=ON L7
 L13 2413 SEA FILE=HCAPLUS ABB=ON L8(L) (PREP OR IMF OR SPN)/RL
 L15 240 SEA FILE=HCAPLUS ABB=ON L13 AND (PHOTORESIST? OR PHOTO?(4A)?RE
 SIST?)
 L16 14 SEA FILE=HCAPLUS ABB=ON L15 AND ACID?(4A)?LABIL?
 L17 31 SEA FILE=HCAPLUS ABB=ON L8 AND ACID?(4A)?LABIL?
 L18 24 SEA FILE=HCAPLUS ABB=ON L17 AND (PHOTORESIST? OR PHOTO?(4A)?RE
 SIST?)
 L19 24 SEA FILE=HCAPLUS ABB=ON L16 OR L18
 L20 6751 SEA FILE=HCAPLUS ABB=ON L3
 L21 4 SEA FILE=HCAPLUS ABB=ON L20 AND AROM?(3A)FREE
 L22 1 SEA FILE=HCAPLUS ABB=ON L21 AND (PHOTORESIST? OR PHOTO?(4A)?RE
 SIST?)
 L23 25 SEA FILE=HCAPLUS ABB=ON L19 OR L22

=> d 123 all 1-25 hitstr

L23 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:813991 HCAPLUS

DN 132:71365

TI Resist composition and resist pattern formation using same

IN Sone, Atsushi

PA Nippon Zeon Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-039

ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

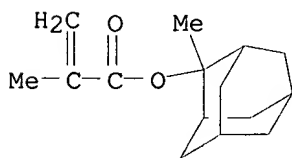
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11352693	A2	19991224	JP 1998-159267	19980608
GI	For diagram(s), see printed CA Issue.				
AB	The title resist compn. contains a polymer I [M1-3 = trivalent org. group; B1-3 = single bond, C1-10 divalent org. group; A1, A2 = divalent org. group having a bond which is cleaved upon reaction with acids; Z = plural atoms required to form an alicyclic hydrocarbon group along with the C atom; R1 = (substituted) C1-6 alkyl; R2 = (substituted) C1-4 alkyl; Q = acid-stable functional group having .gtoreq.1 O, N or S; 2 .ltoreq. (m + n) .ltoreq. 4; p, q, r = 1-10,000] made from 3 components and an acid generator. The title process involves the steps of coating the compn. on a substrate and exposing the coating using a light source of wavelength 180-250 nm. The compn. shows high transparency toward ArF excimer lasers and provides a high resolu. pattern with good profile and dry etch resistance, and is useful for manuf. of semiconductor devices.				
ST	photoresist acrylic polymer acid labile				
IT	Resists				
	(photoresist compn. contg. acid generator and polymer having acid-labile and acid-stable groups)				
IT	252989-33-6P 252989-34-7P				
	RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation) ; USES (Uses) (photoresist compn. contg. acid generator and polymer having acid-labile and acid-stable groups)				
IT	66003-78-9, Triphenylsulfonium trifluoromethanesulfonate				
	RL: TEM (Technical or engineered material use); USES (Uses) (photoresist compn. contg. acid generator and polymer having KATHLEEN FULLER EIC 1700 308-4290				

acid-labile and acid-stable groups)
 IT 252989-33-6P 252989-34-7P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photoresist compn. contg. acid generator and polymer having acid-labile and acid-stable groups)
 RN 252989-33-6 HCAPLUS
 CN Butanedioic acid, methylene-, polymer with 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl 2-methyl-2-propenoate and tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

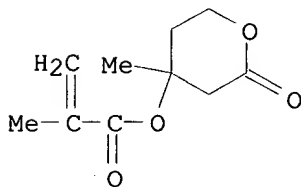
CMF C15 H22 O2



CM 2

CRN 177080-66-9

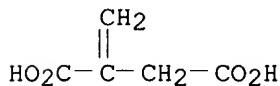
CMF C10 H14 O4



CM 3

CRN 97-65-4

CMF C5 H6 O4

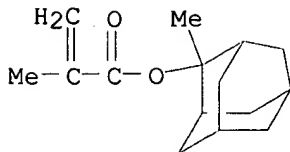


RN 252989-34-7 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester, polymer with 2-methyl-2-propenenitrile and tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

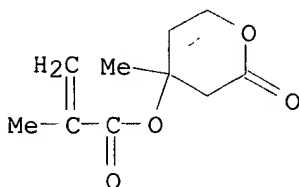
CRN 177080-67-0

CMF C15 H22 O2



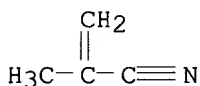
CM 2

CRN 177080-66-9
CMF C10 H14 O4



CM 3

CRN 126-98-7
CMF C4 H5 N



L23 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:572384 HCAPLUS
DN 131:358106
TI Structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist
AU Aoi, Toshiaki; Sato, Kenichiro; Kodama, Kunihiko; Kawabe, Yasumasa; Nakao, Hajime; Yagihara, Morio
CS Yoshida-Minami Res. Lab., Fuji Photo Film Co., Ltd., Haibara-Gun Shizuoka, Japan
SO Proc. SPIE-Int. Soc. Opt. Eng. (1999), 3678(Pt. 1, Advances in Resist Technology and Processing XVI), 283-294
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 37
AB Synthesis of new alicyclic (meth)acrylate polymers contg. androstane moieties, esp. cholic acid derivs., and their characteristics were investigated for 193 nm single layer resists. Among the derivs., a work of adhesion, Ohnishi and ring parameters were used as measures for the adhesion and the dry-etching resistance in this study. In the synthesis of the polymers, the use of 3- (beta) -methacryloyoxy-deoxycholic acid, which is the inverse configuration against the original 3-(alpha) -structure, was effective as a monomer, because the steric hindrance at 3-(alpha) -position degraded its polymn. ability. The polymers partially

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protected by **acid labile** groups showed a satisfactory adhesion, which was probably due to the hydrophilic hydroxyl group at the 12-position and the carboxyl group linked at the 17-position, and a good dry-etching resistance. On the lithog. imaging with these polymers, the redn. of the side reaction on the acid decompn. and also the control of the flexibility on the polymers largely affected their performance. The adjustment of the Tg values of the polymers by the co-polymn. and the change of the polymer backbone from the methacrylate to acrylate structure performed well on imaging under 193 nm exposure.

- ST alicyclic acrylate polymer androstane moiety UV **photoresist**
 IT Polyesters, properties
 RL: PRP (Properties)
 (polyacrylate-; structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT Adhesion, physical
 Dissolution rate
 Etching kinetics
 Polymerization
 Steric hindrance
 (structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT 57-88-5, Cholesterol, properties 768-95-6, 1-Adamantanol 28132-01-6
 RL: PRP (Properties)
 (additive; structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT **34755-33-4** 39611-97-7, Acrylic acid-tert-butyl acrylate copolymer **177080-68-1** **250598-45-9** **250598-47-1** **250598-48-2** **250598-49-3** **250598-51-7** **250598-53-9** **250599-70-3**
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT **244178-44-7P**
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**; PROC (Process)
 (structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT **244176-34-9**
 RL: RCT (Reactant)
 (structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)
- IT 212580-18-2P 241486-18-0P 244176-33-8P 250598-43-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)

RE.CNT 14

RE

- (1) Allen, R; J Photopolym Sci Tech 1995, V8, P623 HCAPLUS
- (2) Gokan, H; J Electrochem Soc 1983, V130, P143 HCAPLUS
- (3) Houlihan, F; Proc of SPIE 1997, V3049, P84 HCAPLUS
- (4) Iwasa, S; Proc of SPIE 1997, V3049, P126 HCAPLUS
- (5) Kaimoto, Y; Proc of SPIE 1992, V1672, P66 HCAPLUS
- (6) Kunz, R; Proc of SPIE 1996, V2724, P365 HCAPLUS
- (7) Maeda, K; Proc of SPIE 1996, V2724, P377 HCAPLUS
- (8) Maeda, K; Proc of SPIE 1997, V3049, P55 HCAPLUS
- (9) Mitsunobu, O; Bull Chem Soc Jpn 1967, V40, P2380 HCAPLUS
- (10) Mitsunobu, O; J Amer Chem Soc 1972, V94, P679
- (11) Nozaki, K; J Photopolym Sci Tech 1996, V9, P509 HCAPLUS
- (12) Okoroanyanwu, U; Proc of SPIE 1997, V3049, P92 HCAPLUS
- (13) Takechi, S; J Photopolym Sci Tech 1996, V9, P475 HCAPLUS
- (14) Wallow, T; Proc of SPIE 1996, V2724, P355

IT **34755-33-4** **177080-68-1** **250598-45-9**

KATHLEEN FULLER EIC 1700 308-4290

250598-47-1 250598-48-2 250598-49-3

250598-51-7 250598-53-9 250599-70-3

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)(structural design of new alicyclic acrylate polymers with androstane
moiety for 193-nm resist)

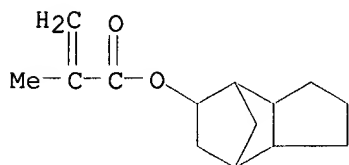
RN 34755-33-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, octahydro-4,7-methano-1H-inden-5-yl ester,
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 34759-34-7

CMF C14 H20 O2



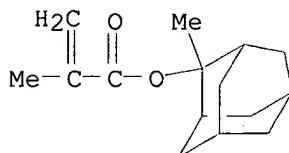
RN 177080-68-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
polymer with tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate
(9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

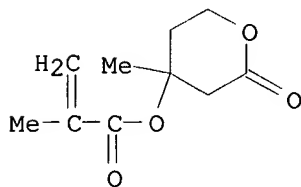
CMF C15 H22 O2



CM 2

CRN 177080-66-9

CMF C10 H14 O4



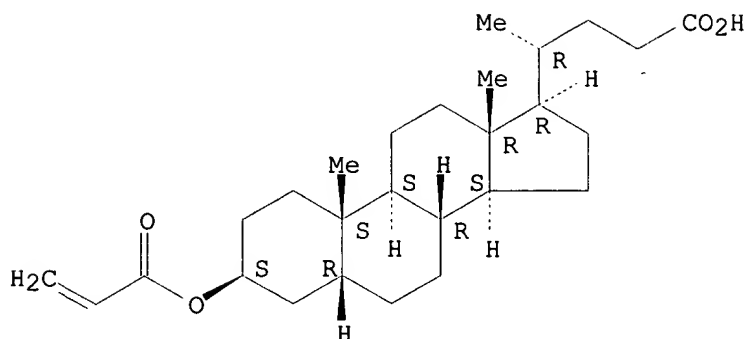
RN 250598-45-9 HCAPLUS

CN Cholan-24-oic acid, 3-[(1-oxo-2-propenyl)oxy]-, (3.beta.,5.beta.)-,
polymer with 1,1-dimethylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

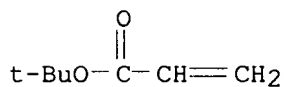
CRN 250598-44-8
CMF C27 H42 O4

Absolute stereochemistry.



CM 2

CRN 1663-39-4
CMF C7 H12 O2

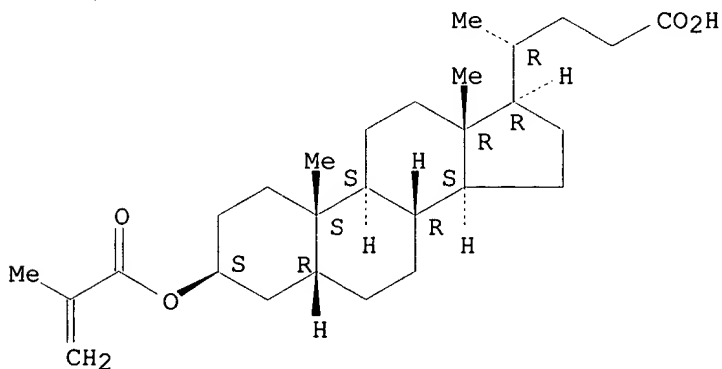


RN 250598-47-1 HCAPLUS
CN Cholan-24-oic acid, 3-[(2-methyl-1-oxo-2-propenyl)oxy]-,
(3.beta.,5.beta.)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 250598-46-0
CMF C28 H44 O4

Absolute stereochemistry.



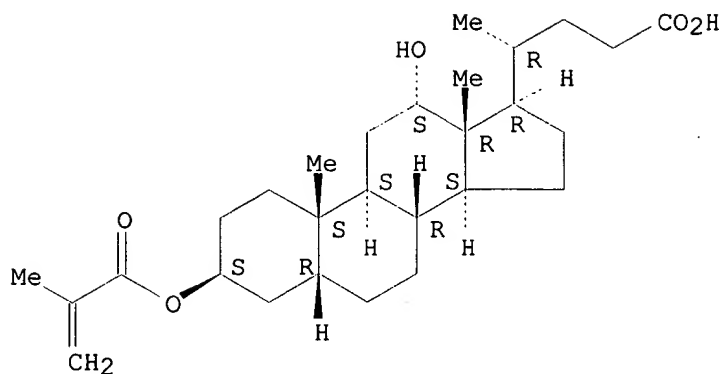
RN 250598-48-2 HCAPLUS
CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-,
(3.beta.,5.beta.,12.alpha.)-, polymer with 1,1-dimethylethyl 2-propenoate
(9CI) (CA INDEX NAME)

CM 1

CRN 244176-33-8

CMF C28 H44 O5

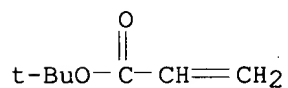
Absolute stereochemistry.



CM 2

CRN 1663-39-4

CMF C7 H12 O2



RN 250598-49-3 HCAPLUS

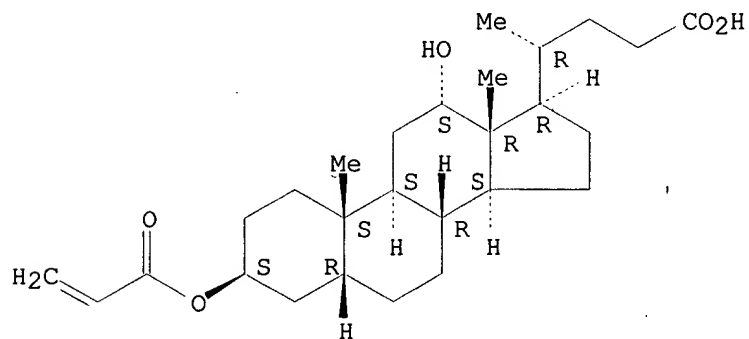
CN Cholan-24-oic acid, 12-hydroxy-3-[(1-oxo-2-propenyl)oxy]-,
(3.beta.,5.beta.,12.alpha.)-, polymer with 1,1-dimethylethyl 2-propenoate
(9CI) (CA INDEX NAME)

CM 1

CRN 250598-43-7

CMF C27 H42 O5

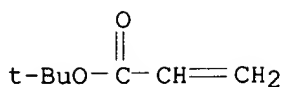
Absolute stereochemistry.



CM 2

CRN 1663-39-4

CMF C7 H12 O2



RN 250598-51-7 HCAPLUS

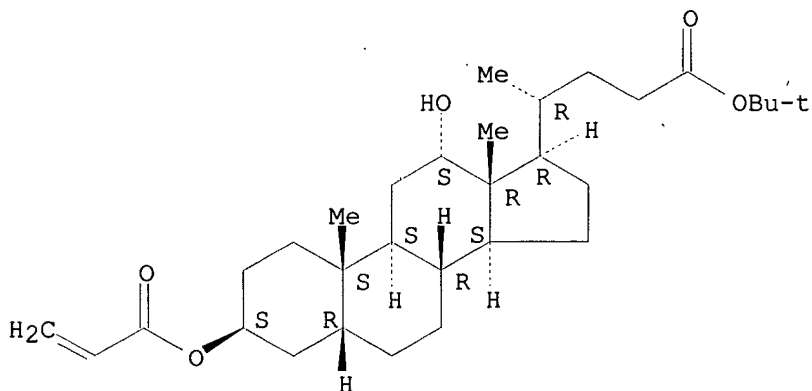
CN Cholan-24-oic acid, 12-hydroxy-3-[(1-oxo-2-propenyl)oxy]-, 1,1-dimethylethyl ester, (3.beta.,5.beta.,12.alpha.)-, polymer with tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 250598-50-6

CMF C31 H50 O5

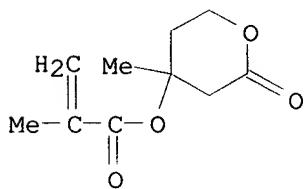
Absolute stereochemistry.



CM 2

CRN 177080-66-9

CMF C10 H14 O4



RN 250598-53-9 HCAPLUS

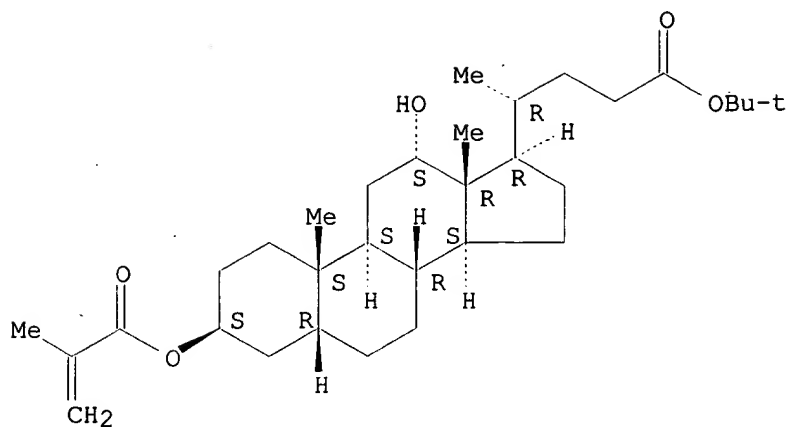
CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, 1,1-dimethylethyl ester, (3.beta.,5.beta.,12.alpha.)-, polymer with 1,1-dimethylethyl (3.beta.,5.beta.,12.alpha.)-12-hydroxy-3-[(1-oxo-2-propenyl)oxy]cholan-24-oate and tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 250598-52-8

CMF C32 H52 O5

Absolute stereochemistry.

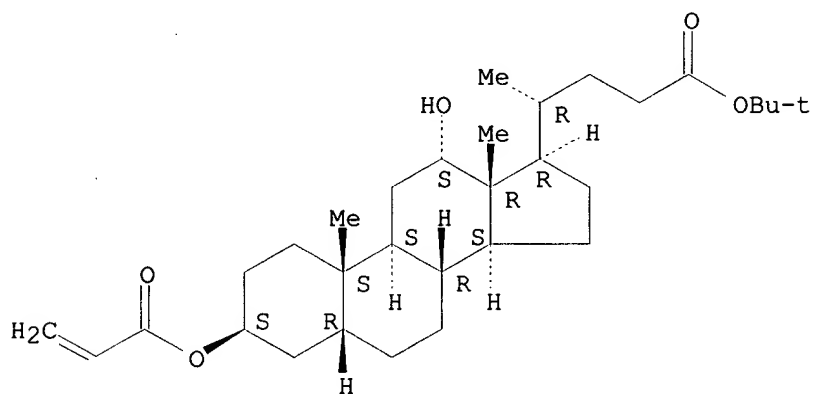


CM 2

CRN 250598-50-6

CMF C31 H50 O5

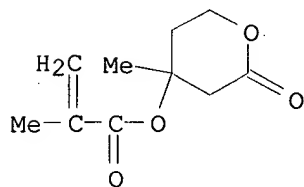
Absolute stereochemistry.



CM 3

CRN 177080-66-9

CMF C10 H14 O4



RN 250599-70-3 HCAPLUS

CN Cholan-24-oic acid, 3-[(2-methyl-1-oxo-2-propenyl)oxy]-, (3.beta.,5.beta.)-, homopolymer, ethoxymethyl ester (9CI) (CA INDEX NAME)

CM 1

KATHLEEN FULLER EIC 1700 308-4290

$$\text{H}_3\text{C}-\text{CH}_2-\text{O}-\text{CH}_2-\text{OH}$$

CRN 250598-47-1
CMF (C28 H44 O4) x
CCI PMS

CRN 250598-46-0
CMF C28 H44 O4

The chemical structure shows a steroid nucleus with several substituents. On the left, a side chain is attached to the C-3 position via an ester linkage: $\text{Me}-\text{C}(\text{CH}_2)=\text{C}(=\text{O})-\text{O}-$. The steroid core has methyl groups at C-10 and C-13, and a methyl group at C-14. A side chain at C-17 includes a methyl group, a chiral center with an 'R' group, and a terminal CO_2H group. Stereochemistry is indicated with 'S' and 'H' labels and wedges/dashes at various positions.

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
SPN (Synthetic preparation); PREP (Preparation); PROC
(Process)
(structural design of new alicyclic acrylate polymers with androstane
moiety for 193-nm resist)

CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, (3.beta.,5.beta.,12.alpha.)-, homopolymer, ethoxymethyl ester (9CI) (CA INDEX NAME)

CRN 10171-38-7
CMF C3 H8 O2

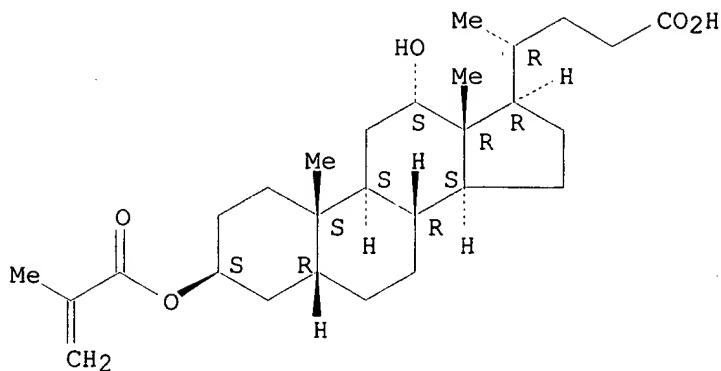
CRN 244176-34-9
CMF (C28 H44 O5) x
CCI PMS

CM 3

CRN 244176-33-8

CMF C28 H44 O5

Absolute stereochemistry.



IT 244176-34-9

RL: RCT (Reactant)

(structural design of new alicyclic acrylate polymers with androstane moiety for 193-nm resist)

RN 244176-34-9 HCAPLUS

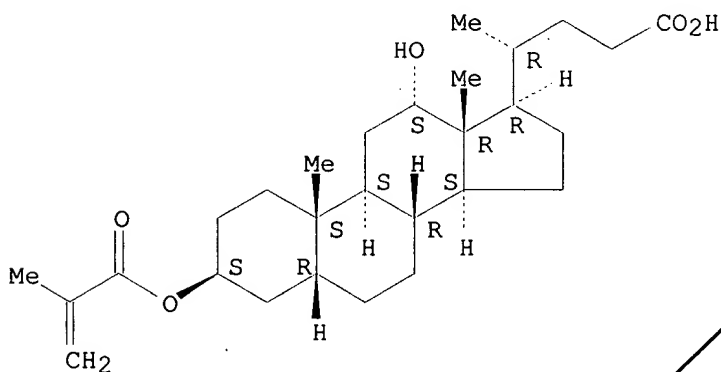
CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, (3.beta.,5.beta.,12.alpha.)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 244176-33-8

CMF C28 H44 O5

Absolute stereochemistry.



L23 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:549479 HCAPLUS

DN 131:163392

TI **Photosensitive** terpolymer for 193-nm **photoresist** composition

IN Schaedeli, Ulrich; Blakeney, Andrew J.; Steinhausler, Thomas; White, Daniela; Gabor, Allen H.

PA Olin Microelectronic Chemicals, Inc., USA

SO PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DT Patent

KATHLEEN FULLER EIC 1700 308-4290

$$\begin{array}{ccc}
 \begin{array}{c} \text{R}^2 \\ | \\ -(\text{CH}_2-\text{C})- \\ | \\ \text{CO}_2 \end{array} & \begin{array}{c} \text{R}^3 \\ | \\ -(\text{CH}_2-\text{C})- \\ | \\ \text{CO}_2 \\ | \\ (\text{CH}_2)_3 \\ | \\ (\text{Me})_3\text{SiO}-\text{Si}-\text{OSi}(\text{Me})_3 \\ | \\ \text{OSi}(\text{Me})_3 \end{array} \\
 \text{I} & & \text{II}
 \end{array}$$

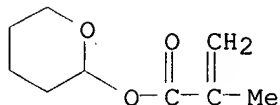
KATHLEEN FULLER EIC 1700 308-4290

tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate and 3-[3,3,3-trimethyl-1,1-bis[(trimethylsilyl)oxy]disiloxanyl]propyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

CM 1

CRN 52858-59-0

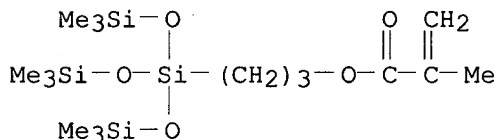
CMF C9 H14 O3



CM 2

CRN 17096-07-0

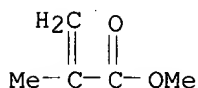
CMF C16 H38 O5 Si4



CM 3

CRN 80-62-6

CMF C5 H8 O2



L23 ANSWER 4 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:518239 HCAPLUS

DN 131:151726

TI Positive **photoresist** compositions with alkoxy-alkyl ester group-containing (co)polymer and carboxyl group-containing (co)polymer

IN Tang, Qian; Roth, Martin

PA Ciba Specialty Chemicals Corporation, USA

SO U.S., 11 pp., Cont.-in-part of U.S. Ser. No. 476,915, abandoned.

CODEN: USXXAM

DT Patent

LA English

IC ICM G03C005-16

ICS G03C001-73

NCL 430329000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5939242	A	19990817	US 1996-757391	19961127
PRAI	US 1995-476915		19950607		

KATHLEEN FULLER EIC 1700 308-4290

- AB The invention relates to pos. **photoresist** compns. which can be developed in aq. alk. media and to a process for the prodn. of relief structures using the **photoresist** compns. Pos. **photoresist** compns. which can be developed in aq. alk. media and comprise (a) .gtoreq.1 homopolymer or copolymer contg. **acid-labile** .alpha.-alkoxy-alkyl ester groups, (b) .gtoreq.1 carboxyl-contg. copolymer in which the content of carboxyl groups is 0.40-5.50 mol/kg, (c) .gtoreq.1 compd. which forms an acid on exposure to actinic radiation, and (d) an org. solvent have high photosensitivity and long shelf life of the components and coatings produced therefrom and are particularly suitable as etch resists for the prodn. of printed circuits.
- ST pos **photoresist** alkoxy alkyl ester polymer; polymer carboxyl alkoxy alkyl ester group
- IT Positive **photoresists**
(developable in aq. alk. media and comprising alkoxy-alkyl ester group-contg. polymers and/or carboxyl group-contg. polymers)
- IT Polyesters, uses
RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(polyacrylate-; pos. **photoresist** compns. developable in aq. alk. media and contg.)
- IT Printed circuit boards
(pos. **photoresist** compns. comprising alkoxy-alkyl ester group-contg. polymers and/or carboxyl group-contg. polymers for prepn. of)
- IT 779-02-2, 9-Methylanthracene 5495-84-1, Quantacure ITX 12226-78-7, Orasol Blue GN 25722-66-1, Triazine A 62613-15-4, Diphenyliodonium hexafluoroarsenate 67707-04-4, Pergascript Blue S-RB 70563-37-0, Multiflow
RL: NUU (Nonbiological use, unclassified); RCT (Reactant); USES (Uses)
(in pos. **photoresists** developable in aq. alk. media and comprising alkoxy-alkyl ester and/or carboxy polymers)
- IT 74227-35-3, Degacure KI85 104558-94-3, Cyracure UVI 6974 104558-95-4, Cyracure UVI 6990 235438-84-3, (4-Nitrophenyl)methyl 9,10-dihydroxy-2-anthracenesulfonate
RL: NUU (Nonbiological use, unclassified); RCT (Reactant); USES (Uses)
(**photoinitiator**; in pos. **photoresists** developable in aq. alk. media and comprising alkoxy-alkyl ester and/or carboxy polymers)
- IT 25133-97-5, Methacrylic acid-methyl methacrylate-ethyl acrylate copolymer 30230-93-4, Methacrylic acid-methyl methacrylate-ethyl acrylate-methacrylamide copolymer 40081-41-2, Methacrylic acid-methyl methacrylate-2-ethylhexyl methacrylate copolymer 52858-60-3, Poly(2-tetrahydropyranyl methacrylate) 52858-63-6, 2-Tetrahydropyranyl methacrylate-methyl methacrylate copolymer 108602-53-5, Methacrylic acid-methyl methacrylate-N-phenylmaleimide copolymer 128691-12-3, 2-Hydroxyethyl methacrylate-methyl methacrylate-2-tetrahydropyranyl methacrylate copolymer 166172-21-0, Methacrylic acid-methyl methacrylate-tert-butyl acrylate copolymer 174081-24-4, 2-Tetrahydropyranyl methacrylate-methyl methacrylate-2-ethylhexyl methacrylate copolymer 202817-73-0, 2-Tetrahydropyranyl methacrylate-methyl methacrylate-2-(dimethylamino)ethyl methacrylate copolymer 235438-83-2, 2-Tetrahydropyranyl methacrylate-methyl acrylate-2-ethylhexyl methacrylate copolymer
RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos. **photoresist** compns. developable in aq. alk. media and contg.)

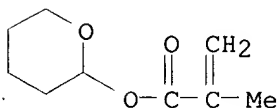
RE.CNT 17

RE

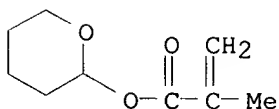
- (1) Anon; JP 2248952 1990
- (2) Anon; EP 0451741 1991 HCAPLUS
- (3) Anon; EP 0454334 1991 HCAPLUS

KATHLEEN FULLER EIC 1700 308-4290

(4) Anon; EP 0488525 1992
 (5) Anon; JP 426850 1992
 (6) Anon; EP 0558280 1993 HCAPLUS
 (7) Anon; EP 0568827 1993 HCAPLUS
 (8) Anon; JP 5017711 1993
 (9) Anon; JP 517711 1993
 (10) Anon; EP 0601974 1994 HCAPLUS
 (11) Bauer; US 5120633 1992
 (12) Bauer; US 5252427 1993 HCAPLUS
 (13) Bauer; US 5262281 1993
 (14) Mayashi; JP 426850 1992
 (15) Murata; US 5482816 1996
 (16) Schadel; US 5369200 1994
 (17) Schadel; US 5397680 1995
 IT 52858-60-3, Poly(2-tetrahydropyranyl methacrylate)
 52858-63-6, 2-Tetrahydropyranyl methacrylate-methyl methacrylate
 copolymer 128691-12-3, 2-Hydroxyethyl methacrylate-methyl
 methacrylate-2-tetrahydropyranyl methacrylate copolymer
 174081-24-4, 2-Tetrahydropyranyl methacrylate-methyl
 methacrylate-2-ethylhexyl methacrylate copolymer 202817-73-0,
 2-Tetrahydropyranyl methacrylate-methyl methacrylate-2-
 (dimethylamino)ethyl methacrylate copolymer 235438-83-2,
 2-Tetrahydropyranyl methacrylate-methyl acrylate-2-ethylhexyl methacrylate
 copolymer
 RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered
 material use); USES (Uses)
 (pos. photoresist compns. developable in aq. alk. media and
 contg.)
 RN 52858-60-3 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
 (9CI) (CA INDEX NAME)
 CM 1
 CRN 52858-59-0
 CMF C9 H14 O3

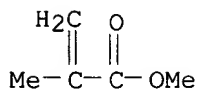


RN 52858-63-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)
 CM 1
 CRN 52858-59-0
 CMF C9 H14 O3



CM 2
 CRN 80-62-6

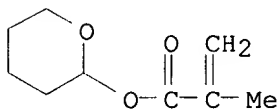
CMF C5 H8 O2



RN 128691-12-3 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with methyl
 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)

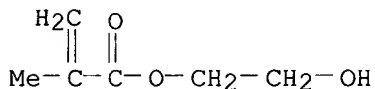
CM 1

CRN 52858-59-0
 CMF C9 H14 O3



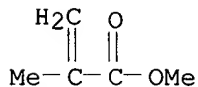
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CRN 868-77-9
 CMF C6 H10 O3



CM 3

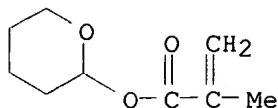
CRN 80-62-6
 CMF C5 H8 O2



RN 174081-24-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with methyl
 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)

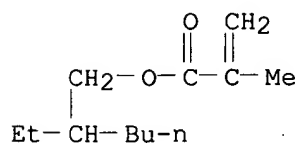
CM 1

CRN 52858-59-0
 CMF C9 H14 O3



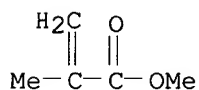
CM 2

CRN 688-84-6
CMF C12 H22 O2



CM 3

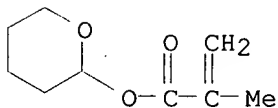
CRN 80-62-6
CMF C5 H8 O2



RN 202817-73-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

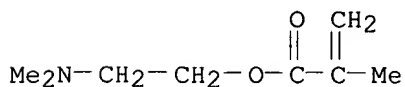
CM 1

CRN 52858-59-0
CMF C9 H14 O3



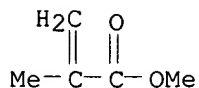
CM 2

CRN 2867-47-2
CMF C8 H15 N O2



CM 3

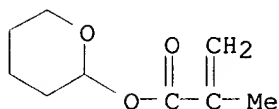
CRN 80-62-6
CMF C5 H8 O2



RN 235438-83-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with methyl 2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

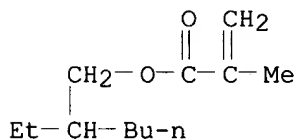
CM 1

CRN 52858-59-0
CMF C9 H14 O3



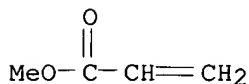
CM 2

CRN 688-84-6
CMF C12 H22 O2



CM 3

CRN 96-33-3
CMF C4 H6 O2



L23 ANSWER 5 OF 25 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:467459 HCAPLUS
DN 131:206853
TI 193 nm Lithography with novel highly transparent acid amplifier for chemically amplified resists
AU Naito, Takuya; Ohfuji, Takeshi; Endo, Masayuki; Morimoto, Hiroaki; Arimitsu, Koji; Ichimura, Kunihiro
CS Semiconductor Leading Edge Technologies, Inc. (Selete), Kanagawa, 244-0817, Japan
SO J. Photopolym. Sci. Technol. (1999), 12(3), 509-514
KATHLEEN FULLER EIC 1700 308-4290

CODEN: JSTEED; ISSN: 0914-9244

PB Technical Association of Photopolymers, Japan

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Pinanediol monosulfonate derivs. were used as acid amplifiers for chem. amplified ArF resists. A highly transparent acid amplifier **free** of **aroms.** improved the sensitivity of the resist without sacrificing the resolu. Adding this acid amplifier to an ArF resist doubled its sensitivity, and 0.15 μm line-and-space patterns were resolved.

ST pinanediol monosulfonate deriv acid amplifier chem amplified **photoresist**; lithog **photoresist** pinanediol monosulfonate deriv acid amplifier

IT **Photoresists**

(chem. amplification; highly transparent acid amplifiers based on pinanediol monosulfonate derivs. for chem. amplified **photoresists** for 193 nm lithog.)

IT 75-59-2, Tetramethylammonium hydroxide

RL: NUU (Nonbiological use, unclassified); USES (Uses)

(developer; chem. amplified **photoresists** for 193 nm lithog. contg. pinanediol monosulfonate derivs. as acid amplifiers)

IT **177080-68-1**, 2-Methyl-adamantylmethacrylate-mevalonic lactone methacrylate copolymer 220922-18-9, ZAF-001

RL: TEM (Technical or engineered material use); USES (Uses)

(highly transparent acid amplifiers based on pinanediol monosulfonate derivs. for chem. amplified **photoresists** for 193 nm lithog.)

IT 242126-68-7, cis-3-(10-(+)-Camphorsulfonyloxy)-2-pinanol 242126-69-8, cis-3-(2-Thiophenesulfonyloxy)-2-pinanol 242126-70-1, cis-3-(1-Octanesulfonyloxy)-2-pinanol

RL: TEM (Technical or engineered material use); USES (Uses)

(pinanediol monosulfonate derivs. as acid amplifiers for chem. amplified **photoresists** for 193 nm lithog.)

RE.CNT 31

RE

(1) Allen, R; J Photopolym Sci Technol 1993, V6, P575 HCAPLUS

(2) Allen, R; J Photopolym Sci Technol 1994, V7, P507 HCAPLUS

(3) Allen, R; Proc SPIE 1995, V2438, P474 HCAPLUS

(4) Allen, R; Solid State Technol 1993, V36, P53 HCAPLUS

(5) Arimitsu, K; J Photopolym Sci Technol 1995, V8, P43 HCAPLUS

(6) Arimitsu, K; J Photopolym Sci Technol 1996, V9, P29 HCAPLUS

(7) Asakawa, K; J Photopolym Sci Technol 1997, V10, P559 HCAPLUS

(8) Dammel, R; Proc SPIE 1998, V3333, P144 HCAPLUS

(9) Hattori, T; J Photopolym Sci Technol 1997, V10, P535 HCAPLUS

(10) Houlihan, F; Proc SPIE 1998, V3333, P73 HCAPLUS

(11) Ichimura, K; Chem Lett 1995, P551 HCAPLUS

(12) Jung, J; J Photopolym Sci Technol 1997, V10, P529 HCAPLUS

(13) Jung, J; Proc SPIE 1998, V3333, P11 HCAPLUS

(14) Kudo, K; J Photopolym Sci Technol 1995, V8, P45 HCAPLUS

(15) Kudo, K; Mol Cryst Liq Cryst 1996, V280, P307 HCAPLUS

(16) Kunz, R; Proc SPIE 1996, V2724, P365 HCAPLUS

(17) Maeda, K; Proc SPIE 1996, V2724, P377 HCAPLUS

(18) Naito, T; Jpn J Appl Phys 1994, V33, P7028 HCAPLUS

(19) Nakano, K; J Photopolym Sci Technol 1997, V10, P561 HCAPLUS

(20) Nakano, K; Proc SPIE 1994, V2195, P194 HCAPLUS

(21) Nakano, K; Proc SPIE 1995, V2438, P433 HCAPLUS

(22) Ohfuji, T; J Photopolym Sci Technol 1997, V10, P551 HCAPLUS

(23) Ohfuji, T; Proc SPIE 1996, V2724, P386 HCAPLUS

(24) Ohfuji, T; Proc SPIE 1997, V3049, P76 HCAPLUS

(25) Rao, C; Ultra-violet and Visible Spectroscopy: Second ed 1967

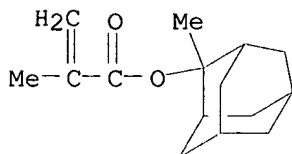
(26) Shida, N; J Photopolym Sci Technol 1996, V9, P457 HCAPLUS

(27) Shida, N; Proc SPIE 1998, V3333, P102 HCAPLUS

(28) Suwa, M; Proc SPIE 1998, V3333, P26 HCAPLUS

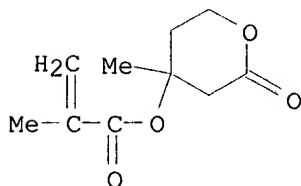
KATHLEEN FULLER EIC 1700 308-4290

(29) Takahashi, M; J Photopolym Sci Technol 1994, V7, P31 HCAPLUS
 (30) Takahashi, M; Proc SPIE 1995, V2438, P422 HCAPLUS
 (31) Takechi, S; J Photopolym Sci Technol 1992, V5, P439 HCAPLUS
 IT 177080-68-1, 2-Methyl-adamantylmethacrylate-mevalonic lactone
 methacrylate copolymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (highly transparent acid amplifiers based on pinanediol monosulfonate
 derivs. for chem. amplified **photoresists** for 193 nm lithog.)
 RN 177080-68-1 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
 polymer with tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)
 CM 1
 CRN 177080-67-0
 CMF C15 H22 O2



CM 2

CRN 177080-66-9
 CMF C10 H14 O4



L23 ANSWER 6 OF 25 HCAPLUS COPYRIGHT 2000 ACS
 AN 1999:467455 HCAPLUS
 DN 131:243955
 TI Design and synthesis of new alicyclic acrylate polymer with androstane
 moiety for 193 nm resist
 AU Aoai, Toshiaki; Sato, Kenichiro; Kodama, Kunihiko; Kawabe, Yasumasa;
 Nakao, Hajime; Yagihara, Morio
 CS Yoshida-Minami Research Lab., Fuji Photo Film Co., Ltd., Shizuoka, 421-03,
 Japan
 SO J. Photopolym. Sci. Technol. (1999), 12(3), 477-486
 CODEN: JSTEOW; ISSN: 0914-9244
 PB Technical Association of Photopolymers, Japan
 DT Journal
 LA English
 CC 37-3 (Plastics Manufacture and Processing)
 Section cross-reference(s): 73, 76
 AB Syntheses of new alicyclic (meth)acrylate polymers contg. androstane
 moieties, esp. cholic acid derivs., and their characteristics were
 investigated for 193 nm single layer resist. Among the derivs., a
 deoxycholic acid structure was selected from the viewpoints of its ability
 KATHLEEN FULLER EIC 1700 308-4290

for dry-etching resistance, adhesion on a substrate, and soly. for resist solvents. A work of adhesion, Ohnishi and ring parameters were used as measures for the adhesion and the dry-etching resistance in this study. In the syntheses of the polymers, the use of 3-.beta.-methacryloyloxy-deoxycholic acid, which is the inverse configuration against the original 3-.alpha.-structure, was effective as a monomer, because the steric hindrance at 3-.alpha.-position degraded its polymn. ability. The polymers partially protected by **acid labile** groups showed a satisfactory adhesion, which was probably due to the hydrophilic hydroxyl group at the 12-position and the carboxyl group linked at the 17-position, and a good dry-etching resistance. On the lithog. imaging with these polymers, the redn. of the side reaction on the acid decompn. and also the control of the flexibility on the polymers largely affected their performance. The adjustment of the Tg values of the polymers by the co-polymn. and the change of the polymer backbone from the methacrylate to acrylate structure performed well on imaging under 193 nm exposure.

ST alicyclic acrylate polymer androstane moiety resist

IT Adhesion, physical

Photoresists

(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT Etching

(dry; design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT Contact angle

Work of adhesion

(of poly(3-.beta.-Methacryloyloxy-deoxycholic acid); design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **244178-44-7P**, 3-.beta.-(Methacryloyloxy)deoxycholic acid

homopolymer ethoxymethyl ester

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

SPN (Synthetic preparation); PREP (Preparation); PROC

(Process)

(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **244176-34-9P**

RL: PEP (Physical, engineering or chemical process); **SPN (Synthetic**

preparation); PREP (Preparation); PROC (Process)

(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **244176-35-0**

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **212580-18-2P**

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**

(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **57-88-5**, Cholesterol, properties **768-95-6**, 1-Adamantanol **28132-01-6**

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(model compd.; design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **79-41-4**, Methacrylic acid, reactions **83-44-3**, Deoxycholic acid

RL: RCT (Reactant)

(monomer synthesis; design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **244176-33-8P** **244176-36-1P**

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**

(monomer; design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

IT **4419-11-8**, 2,2'-Azobis(2,4-dimethylvaleronitrile)

RL: CAT (Catalyst use); USES (Uses)

(polymn. catalyst; design and synthesis of new alicyclic acrylate

KATHLEEN FULLER EIC 1700 308-4290

polymer with androstane moiety for 193 nm resist)

RE.CNT 14

RE

- (1) Allen, R; J Photopolym Sci Tech 1995, V8, P623 HCAPLUS
- (2) Gokan, H; J Electrochem Soc 1983, V130, P143 HCAPLUS
- (3) Houlihan, F; Proc of SPIE 1997, V3049, P84 HCAPLUS
- (4) Iwasa, S; Proc of SPIE 1997, V3049, P126 HCAPLUS
- (5) Kaimoto, Y; Proc of SPIE 1992, V1672, P66 HCAPLUS
- (6) Kunz, R; Proc of SPIE 1996, V2724, P365 HCAPLUS
- (7) Maeda, K; Proc of SPIE 1996, V2724, P377 HCAPLUS
- (8) Maeda, K; Proc of SPIE 1997, V3049, P55 HCAPLUS
- (9) Mitsunobu, O; Bull Chem Soc Jpn 1967, V40, P2380 HCAPLUS
- (10) Mitsunobu, O; J Amer Chem Soc 1972, V94, P679
- (11) Nozaki, K; J Photopolym Sci Tech 1996, V9, P509 HCAPLUS
- (12) Okoroanyanwu, U; Proc of SPIE 1997, V3049, P92 HCAPLUS
- (13) Takechi, S; J Photopolym Sci Tech 1996, V9, P475 HCAPLUS
- (14) Wallow, T; Proc of SPIE 1996, V2724, P355

IT 244178-44-7P, 3-.beta.-(Methacryloyloxy)deoxycholic acid
homopolymer ethoxymethyl ester

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

SPN (Synthetic preparation); PREP (Preparation); PROC

(Process)

(design and synthesis of new alicyclic acrylate polymer with androstane
moiety for 193 nm resist)

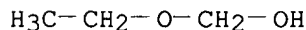
RN 244178-44-7 HCAPLUS

CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-,
(3.beta.,5.beta.,12.alpha.)-, homopolymer, ethoxymethyl ester (9CI) (CA
INDEX NAME)

CM 1

CRN 10171-38-7

CMF C3 H8 O2



CM 2

CRN 244176-34-9

CMF (C28 H44 O5)x

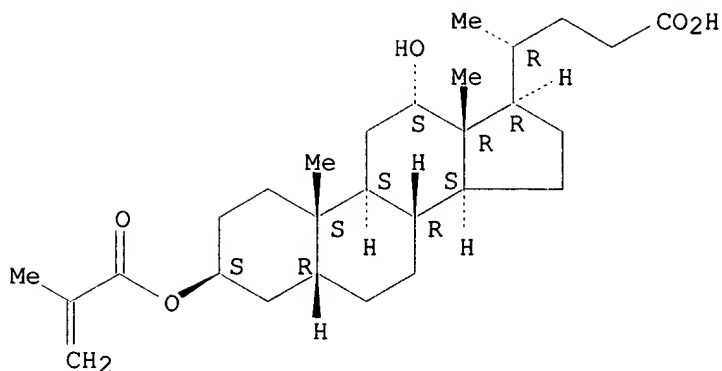
CCI PMS

CM 3

CRN 244176-33-8

CMF C28 H44 O5

Absolute stereochemistry.



IT 244176-34-9P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

RN 244176-34-9 HCAPLUS

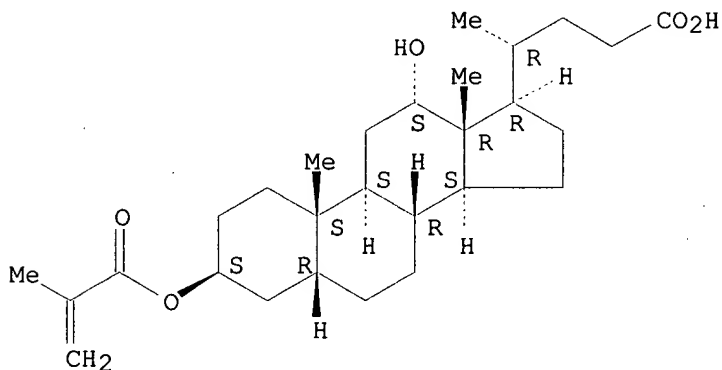
CN Cholan-24-oic acid, 12-hydroxy-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, (3.beta.,5.beta.,12.alpha.)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 244176-33-8

CMF C28 H44 O5

Absolute stereochemistry.



IT 244176-35-0

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(design and synthesis of new alicyclic acrylate polymer with androstane moiety for 193 nm resist)

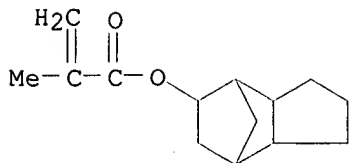
RN 244176-35-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, octahydro-4,7-methano-1H-inden-5-yl ester, polymer with 1,1-dimethylethyl 2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

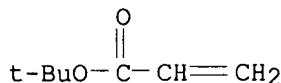
CRN 34759-34-7

CMF C14 H20 O2



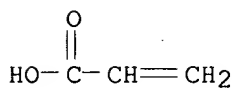
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 79-10-7
CMF C3 H4 O2



L23 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:460322 HCAPLUS

DN 131:108923

TI Polymers for **photoresist** compositions for short wavelength imaging

IN Taylor, Gary N.; Barclay, George G.; Szmanda, Charles R.

PA Shipley Company LLC, USA

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 930542	A1	19990721	EP 1999-200072	19990112
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11258809	A2	19990924	JP 1999-9837	19990118
PRAI	US 1998-7617		19980115		

AB The present invention provides novel polymers and **photoresist** comps. that comprise the polymers as resin binder components. The **photoresist** comps. of the invention can provide highly resolved relief images upon exposure to radiations of extremely short wavelengths, including well-resolved 0.25 .mu. features imaged at 193 nm. Polymers of the invention include those that comprise a photogenerated **acid-labile** unit that includes a cyano moiety, as well as polymers that contain cyano and itaconic anhydride moieties in combination.

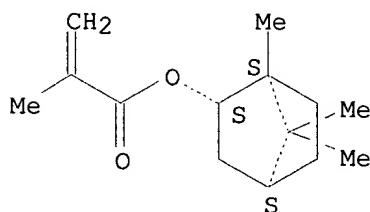
KATHLEEN FULLER EIC 1700 308-4290

ST **photoresist** deep UV itaconic anhydride copolymer
 IT **Photoresists**
 (deep-UV; with polymers contg. cyano and itaconic anhydride moieties)
 IT 229326-00-5, N-[(Perfluorooctanesulfonyl)oxy]-5-norbornene
 2,3-dicarboximide
 RL: TEM (Technical or engineered material use); USES (Uses)
 (deep-UV **photoresists** contg. polymers contg. cyano and
 itaconic anhydride moieties and)
 IT **230634-95-4P**, Isobornyl methacrylate-tert-butyl
 methacrylate-methacrylonitrile-itaconic anhydride-methacrylic acid
 copolymer **230634-96-5P**, Isobornyl methacrylate-tert-butyl
 methacrylate-cyanoethyl methacrylate-itaconic anhydride-methacrylic acid
 copolymer
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered
 material use); **PREP (Preparation)**; USES (Uses)
 (prepn. and use in prepg. deep-UV **photoresists**)
 RE.CNT 2
 RE
 (1) Fujitsu Ltd; EP 0663616 A 1995
 (2) Fujitsu Ltd; DE 19626003 A 1997
 IT **230634-95-4P**, Isobornyl methacrylate-tert-butyl
 methacrylate-methacrylonitrile-itaconic anhydride-methacrylic acid
 copolymer **230634-96-5P**, Isobornyl methacrylate-tert-butyl
 methacrylate-cyanoethyl methacrylate-itaconic anhydride-methacrylic acid
 copolymer
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered
 material use); **PREP (Preparation)**; USES (Uses)
 (prepn. and use in prepg. deep-UV **photoresists**)
 RN 230634-95-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with dihydro-3-methylene-2,5-
 furandione, 1,1-dimethylethyl 2-methyl-2-propenoate, 2-methyl-2-
 propenenitrile and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl
 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

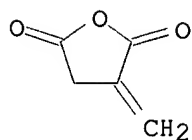
CRN 7534-94-3
 CMF C14 H22 O2
 CDES 2:EXO

Relative stereochemistry.



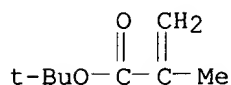
CM 2

CRN 2170-03-8
 CMF C5 H4 O3



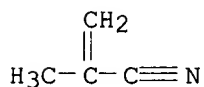
CM 3

CRN 585-07-9
CMF C8 H14 O2



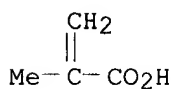
CM 4

CRN 126-98-7
CMF C4 H5 N



CM 5

CRN 79-41-4
CMF C4 H6 O2

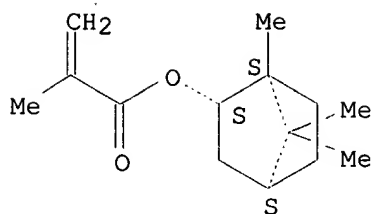


RN 230634-96-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with 2-cyanoethyl
2-methyl-2-propenoate, dihydro-3-methylene-2,5-furandione,
1,1-dimethylethyl 2-methyl-2-propenoate and rel-(1R,2R,4R)-1,7,7-
trimethylbicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX
NAME)

CM 1

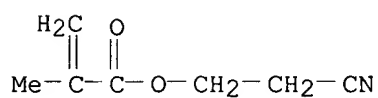
CRN 7534-94-3
CMF C14 H22 O2
CDES 2:EXO

Relative stereochemistry.



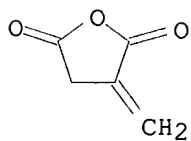
CM 2

CRN 4513-53-5
CMF C7 H9 N O2



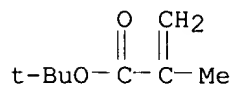
CM 3

CRN 2170-03-8
CMF C5 H4 O3



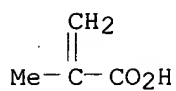
CM 4

CRN 585-07-9
CMF C8 H14 O2



CM 5

CRN 79-41-4
CMF C4 H6 O2



DN 130:345046
 TI Novel polymers and **photoresist** compositions
 IN Taylor, Gary N.; Szmanda, Charles R.
 PA ~~Shipley Company LLC, USA~~
 SO Eur. Pat. Appl., 13 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 915382	A2	19990512	EP 1998-116532	19980902
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6057083	A	20000502	US 1997-963922	19971104
JP 11240919	A2	19990907	JP 1998-349241	19981104
US 1997-963922		19971104		

PI The present invention provides novel polymers and chem. amplified pos. **photoresist** comps. that contain such polymers as binders. Preferred polymers of the invention include one or more structural groups that are capable of reducing the temp. required for effective deprotection of **acid-labile** moieties of the polymers.

ST chem amplified **photoresist acid labile** polymer; pos **photoresist acid labile** polymer

IT Positive **photoresists**
 (chem. amplified; contg. polymers with **acid-labile** moieties)

IT 193345-23-2P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (pos. chem. amplified **photoresists** contg. polymers with **acid-labile** moieties and)

IT 224312-30-5P, exo(7-Thiabicyclo-2,2,1-heptanyl)
 2-methacrylate-isobornyl methacrylate-itaconic anhydride-methacrylic acid-methacrylonitrile copolymer 224312-33-8P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. and use in prep. pos. chem. amplified **photoresists**)

IT 224312-30-5P, exo(7-Thiabicyclo-2,2,1-heptanyl)
 2-methacrylate-isobornyl methacrylate-itaconic anhydride-methacrylic acid-methacrylonitrile copolymer 224312-33-8P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. and use in prep. pos. chem. amplified **photoresists**)

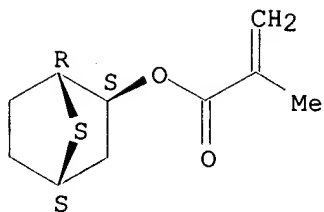
RN 224312-30-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with dihydro-3-methylene-2,5-furandione, 2-methyl-2-propenenitrile, rel-(1R,2S,4S)-7-thiabicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 224312-29-2
 CMF C10 H14 O2 S

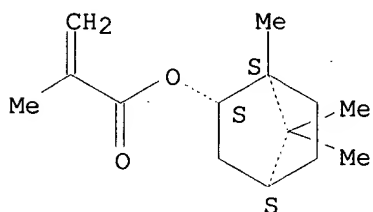
Relative stereochemistry.



CM 2

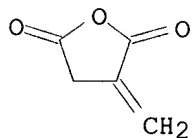
CRN 7534-94-3
 CMF C14 H22 O2
 CDES 2:EXO

Relative stereochemistry.



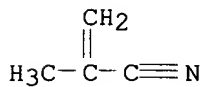
CM 3

CRN 2170-03-8
 CMF C5 H4 O3



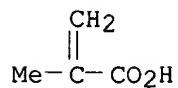
CM 4

CRN 126-98-7
 CMF C4 H5 N



CM 5

CRN 79-41-4
 CMF C4 H6 O2



RN 224312-33-8 HCAPLUS

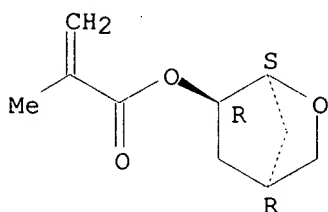
CN 2-Propenoic acid, 2-methyl-, polymer with dihydro-3-methylene-2,5-furandione, 2-methyl-2-propenenitrile, (1S,4R,6R)-2-oxabicyclo[2.2.1]hept-6-yl 2-methyl-2-propenoate and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 224312-32-7

CMF C10 H14 O3

Absolute stereochemistry.



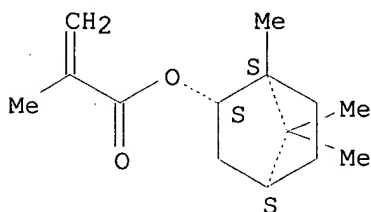
CM 2

CRN 7534-94-3

CMF C14 H22 O2

CDES 2:EXO

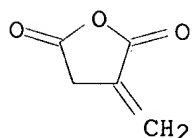
Relative stereochemistry.



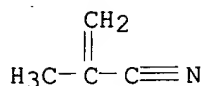
CM 3

CRN 2170-03-8

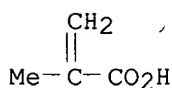
CMF C5 H4 O3



CM 4

CRN 126-98-7
CMF C4 H5 N

CM 5

CRN 79-41-4
CMF C4 H6 O2

L23 ANSWER 9 OF 25 HCAPLUS COPYRIGHT 2000 ACS
 AN 1998:546254 HCAPLUS
 DN 129:223147
 TI Block copolymers as supercritical CO2 developable **photoresists**
 AU Sundararajan, Narayan; Valiyaveetil, Suresh; Ogino, Kenji; Zhou, Xinyi;
 Wang, Jianguo; Yang, Shu; Ober, Christopher K.
 CS Dep. Mater. Sci. Eng., Cornell Univ., Ithaca, NY, 14853, USA
 SO Polym. Mater. Sci. Eng. (1998), 79, 130-131
 CODEN: PMSEGD; ISSN: 0743-0515
 PB American Chemical Society
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB The objective of this study was to utilize the concept of block copolymers
 and their unique properties to provide an environmentally friendly process
 for the fabrication of sub-0.3 .mu.m features using supercrit. carbon
 dioxide development. Block copolymers such as tetrahydropyranyl
 methacrylate-heptafluoropropylmethyl methacrylate (THPMA-F3MA) and
 tetrahydropyranyl methacrylate-pentadecafluoroheptylmethyl methacrylate
 (THPMA-F7MA) with different vol. and molar ratio were synthesized by group
 transfer polymn. THPMA was introduced first, initiated by
 1-methoxyl-trimethylsiloxy-2-methyl-1-propene (MTMS) with
 tetrabutylammonium biacetate (TBAB) as a catalyst in THF. F3MA or F7MA
 was then added as second block and then, polymd. The optimum conditions
 for dissoln. of the virgin polymer before exposure were detd. by
 evaluating the dissoln. characteristics of the polymer at different
 pressure, temp., flow rate of CO2 and time of development. After
 exposure, the proton generated from the photoacid generator cleaves the
acid-labile group in the THPMA component block copolymer
 and converts it into methacrylic acid. This gives rise to a polarity
 change which then makes the polymer insol. in supercrit. CO2 after
 exposure. A plot of film thickness after development vs. exposure dose
 gives an understanding of the sensitivity of the **photoresist**.
 ST tetrahydropyranyl methacrylate fluoromethacrylate block copolymer resist;
 copolymer supercrit carbon dioxide developable **photoresist**
 IT Dissolution
 Imaging
 Lithography
Photoresists

Polarity
Thickness
(block copolymers as supercrit. CO2 developable **photoresists**)

IT Fluoropolymers, uses
Polymers, uses
RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(block copolymers as supercrit. CO2 developable **photoresists**)

IT 204643-92-5 212389-71-4
RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(block copolymers as supercrit. CO2 developable **photoresists**)

IT 124-38-9, Carbon dioxide, reactions 212389-73-6
RL: RCT (Reactant)
(block copolymers as supercrit. CO2 developable **photoresists**)

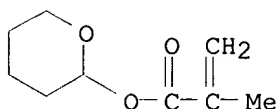
IT 204643-92-5 212389-71-4
RL: NUU (Nonbiological use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(block copolymers as supercrit. CO2 developable **photoresists**)

RN 204643-92-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2,2,3,3,4,4,4-heptafluorobutyl ester, polymer with tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

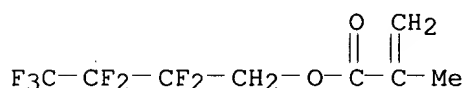
CMF C9 H14 O3



CM 2

CRN 13695-31-3

CMF C8 H7 F7 O2



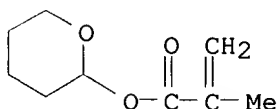
RN 212389-71-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl ester, polymer with tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

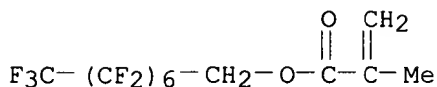
CMF C9 H14 O3



CM 2

CRN 3934-23-4

CMF C12 H7 F15 O2



L23 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:486008 HCAPLUS

DN 129:182002

TI Evaluation of alicyclic methacrylate resist with a .gamma.-butyrolactone protective group for 193-nm lithography

AU Nozaki, Koji; Yano, Ei

CS Fujitsu Laboratories Ltd., Atsugi, 243-0197, Japan

SO J. Photopolym. Sci. Technol. (1998), 11(3), 493-498

CODEN: JSTEEW; ISSN: 0914-9244

PB Technical Association of Photopolymers, Japan

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB We proposed the use of 3-hydroxy-.gamma.-butyrolactone and 2-methyl-2-adamantanol as **acid-labile** protective groups in a methacrylate polymer for building a 193-nm resist with good lithog. and cost performance. In this paper, we investigated the influence of the quantity of 2,2'-azobisisobutyronitrile (AIBN) used in the polymer synthesis, the effect of the polymer mol. wt. (MW) on the lithog. performance, and heat-flow resistance of the resist. We discuss the impact of the AIBN loadings on the pattern profiles as well as the sensitivity and suitable mol. wt. for high resolu. Through the investigation, we found that the quantity of AIBN had little influence on the pattern profiles and the lower loading afforded higher sensitivity. We also found that the suitable MW was around 15,000. The resist displayed no pattern deformation up to 130.degree.C, which is higher than that for a Novolak resist.

ST alicyclic methacrylate resist butyrolactone protective group;
photoresists alicyclic methacrylate polymer lithog
 characterization

IT **Photoresists**

(lithog. performance of alicyclic methacrylate polymer resists with .gamma.-butyrolactone protective group for 193-nm exposures)

IT 78-67-1, AIBN

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(effect of quantity of azobisisobutyronitrile in polymer synthesis on lithog. performance of alicyclic methacrylate polymer resists with .gamma.-butyrolactone protective group for 193-nm photolithog.)

IT 130224-95-2P, .gamma.-Butyrolactone-3-yl methacrylate

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(in prepn. of lithog. alicyclic methacrylate **photoresists** with .gamma.-butyrolactone protective group)

IT **195000-69-2P**, .gamma.-Butyrolactone-3-yl methacrylate-2-Methyl-2-adamantylmethacrylate copolymerRL: PRP (Properties); **SPN (Synthetic preparation)**; TEM

(Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(lithog. performance of alicyclic methacrylate polymer resist with a .gamma.-butyrolactone protective group for 193-nm lithog.)

KATHLEEN FULLER EIC 1700 308-4290

IT 66003-78-9, Triphenylsulfonium triflate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (lithog. performance of alicyclic methacrylate polymer resist with a
 .gamma.-butyrolactone protective group for 193-nm lithog.)

IT 177080-67-0, 2-Methyl-2-adamantylmethacrylate
 RL: RCT (Reactant)
 (polymn. with butyrolactonylmethacrylate)

IT 5469-16-9, 3-Hydroxy-.gamma.-butyrolactone
 RL: RCT (Reactant)
 (reaction with methacryloyl chloride in presence of triethylamine and
 dimethylaminopyridine)

IT 195000-69-2P, .gamma.-Butyrolactone-3-yl methacrylate-2-Methyl-2-
 adamantylmethacrylate copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); TEM
 (Technical or engineered material use); PREP (Preparation); USES
 (Uses)
 (lithog. performance of alicyclic methacrylate polymer resist with a
 .gamma.-butyrolactone protective group for 193-nm lithog.)

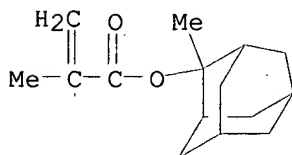
RN 195000-69-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
 polymer with tetrahydro-5-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA
 INDEX NAME)

CM 1

CRN 177080-67-0

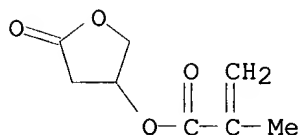
CMF C15 H22 O2



CM 2

CRN 130224-95-2

CMF C8 H10 O4



TR165.P54

10-12 March 1997
 Santa Clara, California.

L23 ANSWER 11 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1997:523483 HCAPLUS

DN 127:240864

TI Evaluation of TER-system resist for 193 nm imaging

AU Johnson, Donald W.; Egbe, Matthew I.; Chen, Cindy; Lin, Lin; Liao, Yihua;
 Bukasa, Ngala; Suzuki, Yasuhiro

CS Microlithography Chemical Corp., Newton, MA, 02164, USA

SO Proc. SPIE-Int. Soc. Opt. Eng. (1997), 3049(Advances in Resist Technology
 and Processing XIV), 997-1009
 CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

KATHLEEN FULLER EIC 1700 308-4290

LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 36, 76
 AB Exposures leading to 0.18 μm or better resolu. is now being demanded by IC development. Photolithog. using 193 nm exposure tools is the leading technol. for the development of these next generation of devices. We are reporting on our development efforts on the TER resist system, which is a single layer resist designed for image evaluation applications at 193 nm exposure wavelengths. The TER-system has been developed to allow equipment manufacturers to evaluate their equipment, to provide R&D lithographers with materials to qualify their 193 nm equipment and to det. process control parameters. The TER-system is a chem. amplified methacrylate resist terpolymer. It is composed of Me methacrylate (MMA), methacrylic acid (MAA) and an acid labile acrylic ester. We have evaluated different leaving groups as the **acid labile** component and we will report on the initial results of several. We also examd. different onium salts as the PAG component. One such example is di(t-butylphenyl)-iodonium p-toluenesulfonate and we will report on other examples which were used. We evaluated the thermal stability of the resins and thermal anal. showed they start to decomp. at about 125.degree.C when tetrahydropyranyl methacrylate is used. Other more thermally stable systems were also evaluated. Post Apply Bake (PAB) temps. of 100-125.degree.C were preferably used with the tetrahydropyranyl ester. Other more thermally stable esters, such as tetrahydro-4-methyl-2-oxo-methacrylate, will also be described. Exposures in the range of 5-50 mJ/cm² were typical and varied depending on the ester, the PAG, and other processing parameters. The acid catalyzed reaction rates after exposure were obsd. to be rapid. In all cases, Post Exposure Bake (PEB) was typically carried out at 100.degree.C or lower. Initial exposure evaluations at 193 nm and 248 nm show good resolu. and image fidelity. The TER-system produced better than 0.225 μm resolu. using 248 nm exposure equipment (NA=0.55) suggesting that better than 0.18 μm resolu. is possible with 193 nm exposures. Results of resist synthesis, formulation and evaluation will be presented.

ST chem amplified methacrylate terpolymer **photoresist**
photolithog
 IT **Photolithography**
Photoresists
 (chem. amplified methacrylate **resist** terpolymer for 193 nm lithog.)

IT Onium compounds
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chem. amplified methacrylate resist terpolymer for 193 nm lithog.)

IT **184295-59-8**, Methacrylic acid-methyl methacrylate-2-tetrahydropyranyl methacrylate copolymer **195370-16-2**, Methacrylic acid-methyl methacrylate-tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl methacrylate copolymer **195370-17-3**, Methacrylic acid-methyl methacrylate-3-oxocyclohexyl methacrylate copolymer **195370-18-4**, 1-Ethoxyethyl methacrylate-methacrylic acid-methyl methacrylate copolymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chem. amplified methacrylate resist terpolymer for 193 nm lithog.)

IT **131717-99-2**, Di(tert-butylphenyl)iodonium-p-toluenesulfonate
194861-06-8, Di(tert-butylphenyl)iodonium-camphorsulfonate **195370-19-5**,
 Di(tert-butylphenyl)iodonium-p-nitrobenzene sulfonate **195370-20-8**,
 Di(tert-butylphenyl)iodonium-xylene sulfonate **195370-21-9**,
 Di(tert-butylphenyl)iodonium-2,4,6-trimethylbenzene sulfonate
195370-22-0, Di(tert-butylphenyl)iodonium-ethane sulfonate **195370-23-1**,
 Di(tert-butylphenyl)iodonium-1-decane sulfonate **195370-24-2**,
 Di(tert-butylphenyl)iodonium-2-naphthalene sulfonate **195370-25-3**,
 Di(tert-butylphenyl)iodonium-picrate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator; chem. amplified methacrylate **resist** terpolymer for 193 nm lithog.)

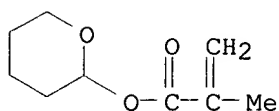
KATHLEEN FULLER EIC 1700 308-4290

IT 184295-59-8, Methacrylic acid-methyl methacrylate-2-tetrahydropyranyl methacrylate copolymer 195370-16-2, Methacrylic acid-methyl methacrylate-tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl methacrylate copolymer 195370-17-3, Methacrylic acid-methyl methacrylate-3-oxocyclohexyl methacrylate copolymer
 RL: TEM (Technical or-engineered material use); USES (Uses)
 (chem. amplified methacrylate resist terpolymer for 193 nm lithog.)
 RN 184295-59-8 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with methyl 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

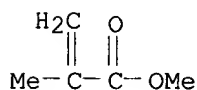
CMF C9 H14 O3



CM 2

CRN 80-62-6

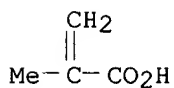
CMF C5 H8 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2

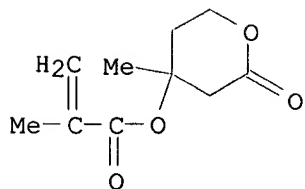


RN 195370-16-2 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with methyl 2-methyl-2-propenoate and tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

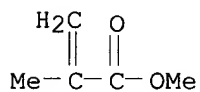
CM 1

CRN 177080-66-9

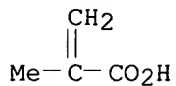
CMF C10 H14 O4



CM 2

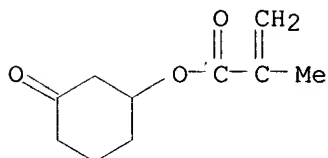
CRN 80-62-6
CMF C5 H8 O2

CM 3

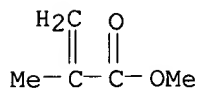
CRN 79-41-4
CMF C4 H6 O2

RN 195370-17-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with methyl 2-methyl-2-propenoate and 3-oxocyclohexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

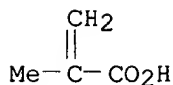
CM 1

CRN 158602-67-6
CMF C10 H14 O3

CM 2

CRN 80-62-6
CMF C5 H8 O2

CM 3

CRN 79-41-4
CMF C4 H6 O2

L23 ANSWER 12 OF 25 HCAPLUS COPYRIGHT 2000 ACS
 AN 1997:471371 HCAPLUS
 DN 127:227270
 TI New protective groups in alicyclic methacrylate polymers for 193-nm resists
 AU Nozaki, Koji; Yano, Ei
 CS Fujitsu Laboratories Ltd., Atugi, 243-01, Japan
 SO J. Photopolym. Sci. Technol. (1997), 10(4), 545-550
 CODEN: JSTEEW; ISSN: 0914-9244
 PB Technical Association of Photopolymers, Japan
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 AB Methacrylate polymer with two **acid labile** protective groups, mevalonic lactone and 2-methyl-2-adamantanol was used as a single layer resist for 193 nm exposure. To improve lithog. performance of this resist the lactone group was replaced by other protective groups. The polarity and acid cleavability of these protective groups and their matching with 2-methyl-2-adamantyl group was studied. Among the 5 studied protective groups, 3-hydroxy-.gamma.-butyrolactone yielded the best lithog. properties.
 ST lithog **photoresist** methacrylate polymer protective group; methyladamantanol methacrylate copolymer chem amplification **photoresist**
 IT **Photoresists**
 (chem. amplification; contg. methyladamantanol methacrylate copolymer with methacrylate contg. polar protective group)
 IT 920-46-7, Methacryloyl chloride
 RL: RCT (Reactant)
 (in prepn. of monomer for polymn. with methyladamantanol methacrylate for application as lithog. chem. amplification **photoresist**)
 IT 108-65-6, Propylene glycol-1-methyl ether-2-acetate
 RL: NUU (Nonbiological use, unclassified); USES (Uses)
 (lithog. chem. amplification **photoresist** from methyladamantanol methacrylate copolymer with methacrylate contg. polar protective group)
 IT 195000-64-7P 195000-67-0P 195000-69-2P 195000-71-6P 195000-73-8P
 RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (lithog. chem. amplification **photoresist** from methyladamantanol methacrylate copolymer with methacrylate contg. polar protective group)
 IT 66003-78-9, Triphenylsulfonium triflate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (lithog. chem. amplification **photoresist** from methyladamantanol methacrylate copolymer with methacrylate contg. polar protective group)
 IT 4245-24-3P 130224-95-2P
 RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**
 KATHLEEN FULLER EIC 1700 308-4290

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(polymn. with methyladamantanol methacrylate for application as lithog. chem. amplification **photoresist**)

IT 13818-44-5 195000-63-6
 RL: RCT (Reactant)
 (polymn. with methyladamantanol methacrylate for application as lithog. chem. amplification **photoresist**)

IT 195000-66-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (polymn. with methyladamantanol methacrylate for application as lithog. chem. amplification **photoresist**)

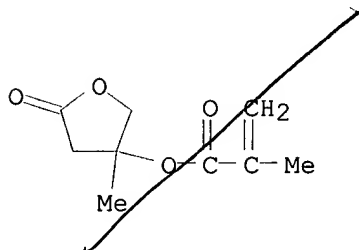
IT 195000-64-7P 195000-67-0P 195000-69-2P
 195000-71-6P 195000-73-8P
 RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (lithog. chem. amplification **photoresist** from methyladamantanol methacrylate copolymer with methacrylate contg. polar protective group)

RN 195000-64-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl, polymer with tetrahydro-3-methyl-5-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

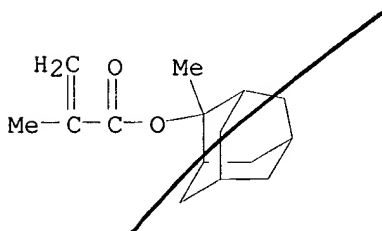
CM 1

CRN 195000-63-6
 CMF C9 H12 O4



CM 2

CRN 177080-67-0
 CMF C15 H22 O2

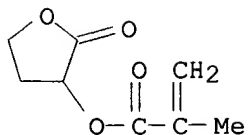


RN 195000-67-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester, polymer with tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

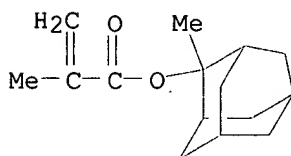
CRN 195000-66-9
 CMF C8 H10 O4



CM 2

CRN 177080-67-0

CMF C15 H22 O2



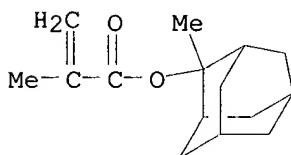
RN 195000-69-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
polymer with tetrahydro-5-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA
INDEX NAME)

CM 1

CRN 177080-67-0

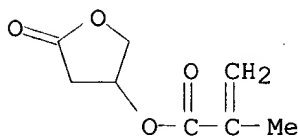
CMF C15 H22 O2



CM 2

CRN 130224-95-2

CMF C8 H10 O4



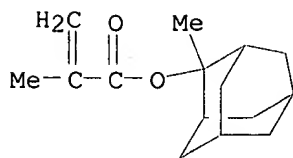
RN 195000-71-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
polymer with tetrahydro-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX
NAME)

CM 1

CRN 177080-67-0

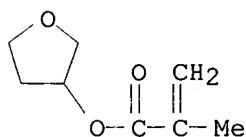
CMF C15 H22 O2



CM 2

CRN 4245-24-3

CMF C8 H12 O3



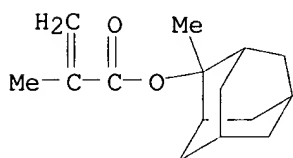
RN 195000-73-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1.3,7]dec-2-yl ester,
polymer with (2-oxo-1,3-dioxolan-4-yl)methyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

CM 1

CRN 177080-67-0

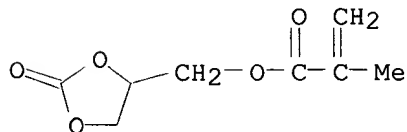
CMF C15 H22 O2



CM 2

CRN 13818-44-5

CMF C8 H10 O5



L23 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1997:180359 HCAPLUS

DN 126:285197

TI Bilayer resist approach for 193-nm lithography

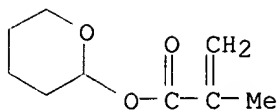
AU Schaedeli, Ulrich; Tinguely, Eric; Blakeney, Andrew J.; Falcigno,

KATHLEEN FULLER EIC 1700 308-4290

Pasquale; Kunz, Roderick R.
CS Ciba-Geigy Ltd, Marly Research Center, Marly, 1723, Switz.
SO Proc. SPIE-Int. Soc. Opt. Eng. (1996), 2724(Advances in Resist Technology
and Processing XIII), 344-354
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 35, 36, 76
AB Tremendous efforts to extend optical lithog. beyond the quarter micrometer
boundary, which is currently achievable with KrF-excimer laser lithog.,
are ongoing. 193 Nm lithog., using ArF-excimer lasers, is believed to be
the technol. of choice to approach the ambitious sub-0.2 .mu.m resoln.
target. Single layer, pos. tone resist systems, which can be developed
with aq. base, would be preferred. However, it might well turn out that
the targeted requirements can only be fulfilled by resist systems which
involve some type of dry etch steps. This paper will focus on a pos. tone
bilayer resist system, which is based on novel silicon contg. methacrylate
polymers bearing **acid labile** side groups. Due to a
unique combination of monomeric building blocks, polymers with high
silicon concns. and, at the same time, high thermal flow stability are
obtained. Hardbaked novolac is used as the planarizing layer. Resists
systems based on the new silicon contg. polymers demonstrated 0.175 .mu.m
resoln. capability, a thermal flow stability >120.degree.C, and an etch
selectivity ratio >20.
ST microlithog bilayer resist chem amplification
IT **Photoresists**
(UV pos.-working; bilayer **resist** approach for 193-nm lithog.)
IT Integrated circuits
(bilayer resist approach for 193-nm lithog.)
IT Radical polymerization
Reactive ion etching
(prepn. of methacrylic **photoresists**)
IT **Photolithography**
(submicron UV; bilayer **resist** approach for 193-nm lithog.)
IT 75-65-0, tert-Butanol, reactions 79-41-4, Methacrylic acid, reactions
109-92-2, Ethyl vinyl ether 109-93-3, Vinyl ether 110-87-2 920-46-7,
Methacryloyl chloride
RL: RCT (Reactant)
(prepn. of methacrylic **photoresists**)
IT 585-07-9P, tert-Butyl methacrylate 51920-52-6P, 2-Propenoic acid,
2-methyl-, 1-ethoxyethyl ester 52858-59-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of methacrylic **photoresists**)
IT 151372-04-2 **181468-99-5** 181469-03-4
RL: TEM (Technical or engineered material use); USES (Uses)
(silicon-contg. methacrylate **photoresists**)
IT **181468-99-5**
RL: TEM (Technical or engineered material use); USES (Uses)
(silicon-contg. methacrylate **photoresists**)
RN 181468-99-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with tetrahydro-2H-pyran-2-yl
2-methyl-2-propenoate and 3-[3,3,3-trimethyl-1,1-
bis[(trimethylsilyl)oxy]disiloxanyl]propyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)
CM 1
CRN 52858-59-0
CMF C9 H14 O3

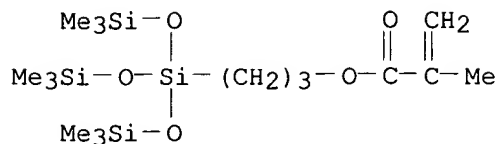
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checked*

*Don't
use it
Duplicate*



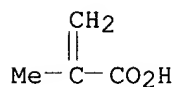
CM 2

CRN 17096-07-0
CMF C16 H38 O5 Si4



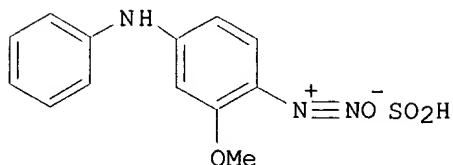
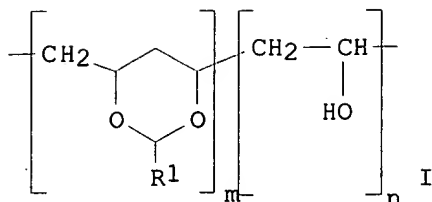
CM 3

CRN 79-41-4
CMF C4 H6 O2



L23 ANSWER 14 OF 25 HCAPLUS COPYRIGHT 2000 ACS
AN 1997:174516 HCAPLUS
DN 126:179058
TI Photosensitive composition containing acid, vinyl alcohol polymer, and
photoacid-generator for photoresist
IN Shinoda, Naomi; Gokochi, Tooru
PA Tokyo Shibaura Electric Co, Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03F007-004
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08328242	A2	19961213	JP 1995-136774	19950602
GI					



II

- AB The title compn. comprises (A) a metal ion- and/or a basic compd.-contg. compd., which changes its soly. after acid crosslinking or decompn., (B) a photoacid-generating agent, and (C) an acid. The **acid-labile** compd. may be water-sol. and has a repeating unit I (R1 = H, monovalent org. group; m, n = integer) or [CH₂CH(OH)]_n. The compn. shows high photosensitivity even if it is contaminated with metal ions and basic compds. Thus, H₂SO₄ and II were added to an aq. poly(vinyl butyral) soln. (Na⁺ 2500 ppm) to give a resist soln.
- ST **photoresist** acid polyvinyl alc **photoacid** generator;
acetal polyvinyl metal basic compd **photoresist**
- IT **Photoresists**
(**photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT Polyvinyl acetals
Polyvinyl butyrals
Polyvinyl formals
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT Acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT Bases, uses
Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(vinyl alc. polymer contg.; **photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT 137867-61-9, NAT 105 167095-81-0 173162-27-1 180574-69-0
186966-39-2
RL: TEM (Technical or engineered material use); USES (Uses)
(**photoacid-generator**; **photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT 56-82-6DP, Glyceraldehyde, cyclic acetals with poly(vinyl alc.)
598-35-6DP, Lactaldehyde, cyclic acetals with poly(vinyl alc.)
4170-30-3DP, Crotonaldehyde, cyclic acetals with poly(vinyl alc.)
186966-40-5P, tert-Butyl methacrylate-menthyl methacrylate copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**photosensitive** compn. contg. acid, vinyl alc. polymer, and **photoacid-generator** for **photoresist**)
- IT 66-25-1D, Hexanal, cyclic acetals with poly(vinyl alc.) 75-87-6D,
KATHLEEN FULLER EIC 1700 308-4290

Chloral, cyclic acetals with poly(vinyl alc.) 76-36-8D, Butylchloral, cyclic acetals with poly(vinyl alc.) 78-84-2D, Isobutyraldehyde, cyclic acetals with poly(vinyl alc.) 78-85-3D, Methacrolein, cyclic acetals with poly(vinyl alc.) 79-02-7D, Dichloroacetaldehyde, cyclic acetals with poly(vinyl alc.) 100-52-7D, Benzaldehyde, cyclic acetals with poly(vinyl alc.) 104-55-2D, cyclic acetals with poly(vinyl alc.) 107-02-8D, Acrylaldehyde, cyclic acetals with poly(vinyl alc.) 107-20-0D, Chloroacetaldehyde, cyclic acetals with poly(vinyl alc.) 110-62-3D, Valeraldehyde, cyclic acetals with poly(vinyl alc.) 111-71-7D, Heptanal, cyclic acetals with poly(vinyl alc.) 112-31-2D, Decanal, cyclic acetals with poly(vinyl alc.) 115-17-3D, Bromal, cyclic acetals with poly(vinyl alc.) 123-38-6D, Propionaldehyde, cyclic acetals with poly(vinyl alc.) 124-13-0D, Octanal, cyclic acetals with poly(vinyl alc.) 124-19-6D, Nonanal, cyclic acetals with poly(vinyl alc.) 141-46-8D, Glycolaldehyde, cyclic acetals with poly(vinyl alc.) 298-12-4D, cyclic acetals with poly(vinyl alc.) 590-86-3D, Isovaleraldehyde, cyclic acetals with poly(vinyl alc.) 1115-11-3D, 2-Methyl-2-butenal, cyclic acetals with poly(vinyl alc.) 7637-07-2, Boron trifluoride, uses 7647-01-0, Hydrochloric acid, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 28777-87-9D, Hydroxybenzaldehyde, cyclic acetals with poly(vinyl alc.) 30678-61-6D, Naphthaldehyde, cyclic acetals with poly(vinyl alc.)

RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive compn. contg. acid, vinyl alc. polymer, and
photoacid-generator for photoresist)

IT 7440-23-5, Sodium, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(vinyl alc. polymer contg.; photosensitive compn. contg. acid, vinyl
alc. polymer, and **photoacid-generator for photoresist**
)

IT 186966-40-5P, tert-Butyl methacrylate-menthyl methacrylate
copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); **PREP (Preparation)**; USES (Uses)
(photosensitive compn. contg. acid, vinyl alc. polymer, and
photoacid-generator for photoresist)

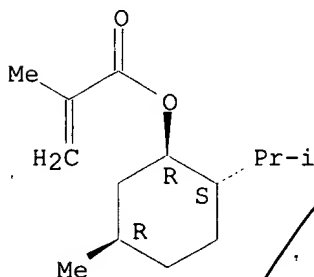
RN 186966-40-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with
(1.alpha.,2.beta.,5.alpha.)-5-methyl-2-(1-methylethyl)cyclohexyl
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

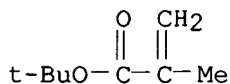
CRN 7372-67-0
CMF C14 H24 O2
CDES 2:1A,2B,5A

Relative stereochemistry.



CM 2

CRN 585-07-9
CMF C8 H14 O2



L23 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2000 ACS
AN 1996:444776 HCAPLUS
DN 125:234231
TI Impact of 2-methyl-2-adamantyl group used for 193-nm single-layer resists
AU Takechi, Satoshi; Takahashi, Makoto; Kotachi, Akiko; Nozaki, Koji; Yano, Ei; Hanyu, Isamu
CS Fujitsu Limited, Kawasaki, 211-88, Japan
SO J. Photopolym. Sci. Technol. (1996), 9(3), 475-487
CODEN: JSTEEW; ISSN: 0914-9244
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB To use a TMAH (tetramethylammonium hydroxide aq. soln.) developer with a resist based on adamantylmethacrylates, we proposed a cleavable adamantyl ester by protonic acid. We found that a 2-methyl-2-adamantyl ester was cleavable by protonic acid and poly(2MAdMA) (2-methyl-2-adamantylmethacrylate) worked as a chem. amplified resist with good sensitivity. We achieved high resoln. by improving the adhesion. The 2MAdMA-MAA (methacrylic acid) resist achieved 0.165 .mu.m L/S with 3.0 mJ/cm2 in ArF evaluation using a dil. TMAH developer. We could use a 2.38% TMAH developer by introducing 2MAdMA to the strongly polar **acid labile** protect group, OCMA (3-oxocycloheptylmethacrylate) or MLMA (mevalonic lactone methacrylate), which had good adhesion. We obtained fine patterns below 0.20.mu.m at below 10 mJ/cm2 in ArF evaluation with 2.38%TMAH developer. We achieved a min. resoln. with 0.15 .mu.m L/S patterns and a D.O.F. of 0.6 .mu.m at 0.18 .mu.m L/S patterns using a 2MAdMA-MLMA resist.
ST **photoresist** methyl adamantyl methacrylate polymer
IT **photolithog**
IT Adhesion
(improved adhesion and high resoln. in lithog. performance of resist with methyl-adamantyl group)
IT **Resists**
(photo-, chem. amplified **resist** with methyl-adamantyl group which is sol. in tetramethylammonium hydroxide)
IT Lithography
(photo-, high resoln. in lithog. performance of resist with methyl-adamantyl group and improved adhesion)
IT 158602-69-8 177080-68-1 181020-29-1
181531-12-4 181531-13-5
RL: TEM (Technical or engineered material use); USES (Uses)
(chem. amplified resist with methyl-adamantyl group which is sol. in tetramethylammonium hydroxide)
IT 75-59-2, Tetramethylammonium hydroxide
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(developer; chem. amplified resist with methyl-adamantyl group which is sol. in tetramethylammonium hydroxide)
IT 66003-78-9, Triphenylsulfonium triflate
RL: TEM (Technical or engineered material use); USES (Uses)
(**photoacid** generator; chem. amplified **resist** with methyl-adamantyl group which is sol. in tetramethylammonium hydroxide)
IT 158602-69-8 177080-68-1 181020-29-1

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181531-12-4 181531-13-5

RL: TEM (Technical or engineered material use); USES (Uses)
 (chem. amplified resist with methyl-adamantyl group which is sol. in
 tetramethylammonium hydroxide)

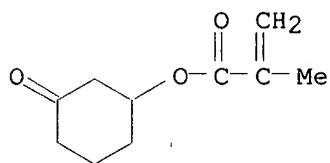
RN 158602-69-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-oxocyclohexyl ester, polymer with
 tricyclo[3.3.1.1^{3,7}]dec-1-yl-2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 158602-67-6

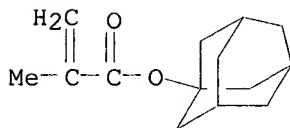
CMF C10 H14 O3



CM 2

CRN 16887-36-8

CMF C14 H20 O2



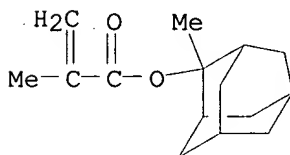
RN 177080-68-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl ester,
 polymer with tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

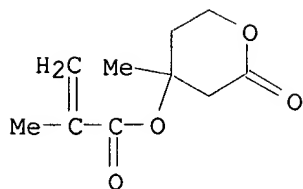
CMF C15 H22 O2



CM 2

CRN 177080-66-9

CMF C10 H14 O4

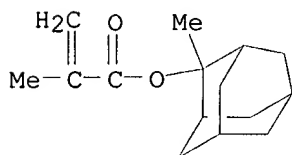


RN 181020-29-1 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1.3,7]dec-2-yl ester,
 homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

CMF C15 H22 O2

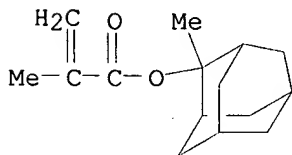


RN 181531-12-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with 2-methyltricyclo[3.3.1.1.3,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

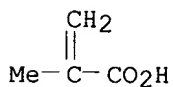
CMF C15 H22 O2



CM 2

CRN 79-41-4

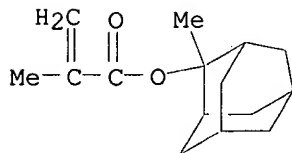
CMF C4 H6 O2



RN 181531-13-5 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1.3,7]dec-2-yl ester,
 polymer with 3-oxocyclohexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

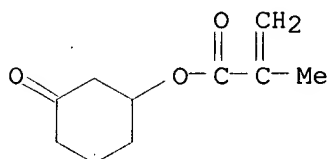
CM 1

CRN 177080-67-0
CMF C15 H22 O2



CM 2

CRN 158602-67-6
CMF C10 H14 O3



L23 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1996:137662 HCAPLUS

DN 124:189529

TI Positive working photoresist

IN Tang, Qian; Roth, Martin

PA Ciba-Geigy A.-G., Switz.

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA German

IC ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 689098	A1	19951227	EP 1995-810395	19950613
	R: AT, BE, CH, DE, FR; GB, IT, LI, NL				
	CA 2152236	AA	19951223	CA 1995-2152236	19950620
	CN 1121190	A	19960424	CN 1995-107005	19950621
	JP 08050356	A2	19960220	JP 1995-179554	19950622
PRAI	CH 1994-1992		19940622		
	CH 1995-138		19950118		

AB An aq. alkali-sol. pos. photoresist compn. comprises: (a) .gtoreq.1 homo- or copolymer contg. an acid labile .alpha.-alkoxyalkyl ester group; (b) .gtoreq.1 carboxylic acid group-contg. copolymer where the content of carboxylic acid group is 0.4-5.5 mol/kg; (c) .gtoreq.1 photoacid generator; and (d) an org. solvent. The components of the compn. has high storage stability and the compn. has high photosensitivity and the material can be used for producing etching resistance images.

ST pos photoresist alkoxyalkyl ester copolymer

IT Resists

(photo, acid-labile alpha-alkoxyalkyl ester polymer)

IT 25133-97-5, Ethyl acrylate-methacrylic acid-methyl methacrylate

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✓ doesn't add anything to Johnson

copolymer 30230-93-4, Ethyl acrylate-methacrylamide-methacrylic
 acid-methyl methacrylate copolymer 40081-41-2, 2-Ethylhexyl
 methacrylate-methacrylic acid-methyl methacrylate copolymer
 52858-60-3 108602-53-5 128691-12-3 153928-42-8
 166172-21-0 174081-24-4 174081-25-5
 174081-26-6

RL: DEV (Device component use); USES (Uses)
 (acid-labile alpha-alkoxyalkyl ester polymer)

IT 52858-60-3 128691-12-3 153928-42-8

174081-24-4 174081-25-5 174081-26-6

RL: DEV (Device component use); USES (Uses)
 (acid-labile alpha-alkoxyalkyl ester polymer)

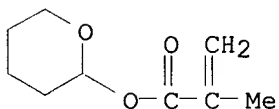
RN 52858-60-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
 (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

CMF C9 H14 O3



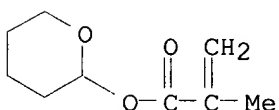
RN 128691-12-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with methyl
 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

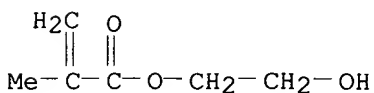
CMF C9 H14 O3



CM 2

CRN 868-77-9

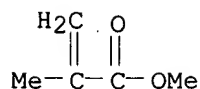
CMF C6 H10 O3



CM 3

CRN 80-62-6

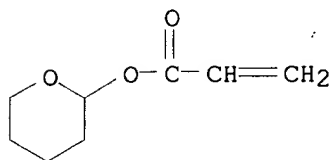
CMF C5 H8 O2



RN 153928-42-8 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)

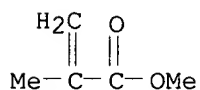
CM 1

CRN 52858-57-8
 CMF C8 H12 O3



CM 2

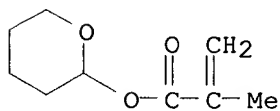
CRN 80-62-6
 CMF C5 H8 O2



RN 174081-24-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with methyl
 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate
 (9CI) (CA INDEX NAME)

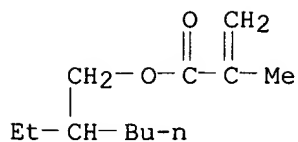
CM 1

CRN 52858-59-0
 CMF C9 H14 O3

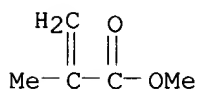


CM 2

CRN 688-84-6
 CMF C12 H22 O2



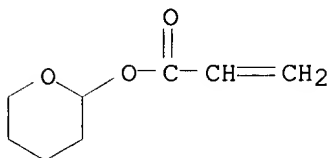
CM 3

 CRN 80-62-6
 CMF C5 H8 O2


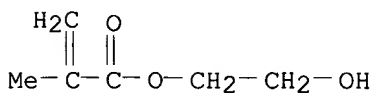
RN 174081-25-5 HCAPLUS

 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with methyl
 2-propenoate and tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX
 NAME)

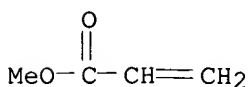
CM 1

 CRN 52858-57-8
 CMF C8 H12 O3


CM 2

 CRN 868-77-9
 CMF C6 H10 O3


CM 3

 CRN 96-33-3
 CMF C4 H6 O2


RN 174081-26-6 HCAPLUS

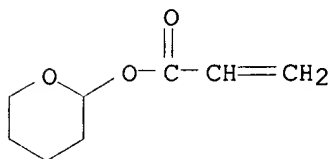
KATHLEEN FULLER EIC 1700 308-4290

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate and tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-57-8

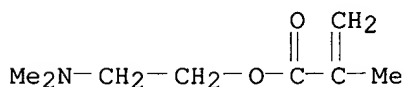
CMF C8 H12 O3



CM 2

CRN 2867-47-2

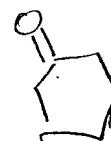
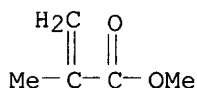
CMF C8 H15 N O2



CM 3

CRN 80-62-6

CMF C5 H8 O2



L23 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1994:689426 HCAPLUS

DN 121:289426

TI Molecular Design and Synthesis of 3-Oxocyclohexyl Methacrylate for ArF and KrF Excimer Laser Resist

AU Nozaki, Koji; Kaimoto, Yuko; Takahashi, Makoto; Takechi, Satoshi; Abe, Naomichi

CS Fujitsu Limited, Kawasaki, 211, Japan

SO Chem. Mater. (1994), 6(9), 1492-8

CODEN: CMATEX; ISSN: 0897-4756

DT Journal

LA English

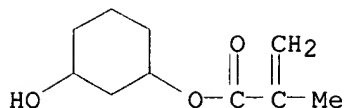
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB We originally designed 3-oxocyclohexyl methacrylate (OCMA) for an **acid-labile** component in chem. amplification. The key concept of the mol. design of the 3-oxocyclohexyl substituent was the introduction of acidic protons at the .alpha. position of the elimination site by using a ketone functional group. OCMA was synthesized by esterification of 1,3-cyclohexanediol and methacryloyl chloride followed by pyridinium dichromate oxidn. Using AIBN as an initiator, we also

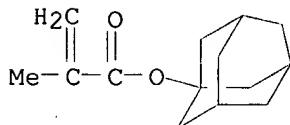
KATHLEEN FULLER EIC 1700 308-4290

prepd. Poly(OCMA-co-AdMA) (AdMA: adamantyl methacrylate) by a thermally induced radical copolymn. of OCMA and AdMA. The resist comprises the copolymer and 10 wt % of triphenylsulfonium hexafluoroantimonate as a photoacid generator (PAG). This resist has high sensitivity, good thermal stability, good dry etch resistance, and good postexposure delay durability. Using a KrF excimer laser stepper (NA = 0.45) and 2-propanol mixed aq. alkali developer, we obtained 0.3-.mu.m line and space patterns with our resist. A resist with 1 wt % of the PAG has an acceptable transmittance at 193 nm, so we believe this resist is suitable for ArF excimer lithog.

ST excimer laser **photoresist** oxocyclohexyl methacrylate design
 IT **Resists**
 (photo-, excimer laser lithog.; lithog. characterization of
 adamantyl methacrylate-oxocyclohexyl methacrylate copolymer for)
 IT **158948-10-8P**
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered
 material use); **PREP (Preparation)**; USES (Uses)
 (lithog. characterization of excimer laser **photoresist**
 contg.)
 IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (lithog. characterization of excimer laser **photoresist** contg.
 adamantyl methacrylate-oxocyclohexyl methacrylate copolymer and)
 IT 158602-67-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (mol. design and synthesis for excimer laser **photoresists**
 applications)
 IT 20039-37-6, Pyridinium dichromate 25561-30-2, N,O-
 Bis(trimethylsilyl)trifluoroacetamide
 RL: RCT (Reactant)
 (mol. design and synthesis of oxocyclohexyl methacrylate for excimer
 laser **photoresists** applications)
 IT 16887-36-8P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (polymn. with oxocyclohexyl methacrylate for excimer laser
 photoresists applications)
 IT 54146-65-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction with in synthesis of oxocyclohexyl methacrylate
 for excimer laser **photoresists** applications)
 IT 920-46-7, Methacryloyl chloride
 RL: RCT (Reactant)
 (reaction with cyclohexanediol in prepn. of oxocyclohexyl methacrylate
 for excimer laser **photoresists** applications)
 IT 504-01-8, 1,3-Cyclohexanediol
 RL: RCT (Reactant)
 (reaction with methacryloyl chloride in prepn. of oxocyclohexyl
 methacrylate for excimer laser **photoresists** applications)
 IT **158948-10-8P**
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered
 material use); **PREP (Preparation)**; USES (Uses)
 (lithog. characterization of excimer laser **photoresist**
 contg.)
 RN 158948-10-8 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 3-hydroxycyclohexyl ester, polymer with
 tricyclo[3.3.1.1^{3,7}]dec-1-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)
 CM 1
 CRN 54146-65-5
 CMF C10 H16 O3



CM 2

CRN 16887-36-8
CMF C14 H20 O2

TRI-P674

Don't use it
It is
copolymer of
tetrahydro-
pyranyl
methacrylate
plus
phenyl
methacrylate

- L23 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2000 ACS
AN 1994:148625 HCAPLUS
DN 120:148625
TI Positive-working **photoresists** sensitive to visible light. III.
Poly(tetrahydropyranyl methacrylates) activated by dye-sensitized
decomposition of diphenyliodonium salt
AU Ohe, Yasushi; Ichimura, Kunihiro
CS Fundam. Res. Cent., Toppan Print. Co., Ltd., Saitama, 345, Japan
SO J. Imaging Sci. Technol. (1993), 37(3), 250-5
CODEN: JIMTE6; ISSN: 1062-3701
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
AB A binary acid generator system based on the photolysis of diphenyliodonium
salt sensitized with 2-benzoyl-3-(4-dimethylaminophenyl)-2-propenenitrile
was applied to polymers incorporating tetrahydropyranyl methacrylate
(THPMA) as an **acid-labile** monomer unit. Detailed
studies on the photosensitive characteristics were made on 4:1 copolymer
of THPMA with Ph methacrylate as pos.-working **photoresists**
developed with alc. solvent. Although THPMA homopolymer demonstrated
higher sensitivity to 488-nm light, the copolymer has better adhesion
properties on glass plate substrate. Discussion of the inhibiting effect
of the sensitizing dye on the sensitivity curves of the
photoresists is presented. The **photoresist** was
applicable to relief image holog. and gave .apprx.30% diffraction
efficiency upon exposure to an Ar⁺ laser emitting 488-nm light at 2
mJ/cm².
ST holog **photoresist** hydropyranyl methacrylate polymer
phenyliodonium
IT Holography
(**photoresist** for, based on poly(tetrahydropyranyl
methacrylates) activated by dye-sensitized decompn. of diphenyliodonium
salt)
IT **Resists**
(**photo**-, pos.-working, poly(tetrahydropyranyl methacrylates)
activated by dye-sensitized decompn. of diphenyliodonium salt as, for
visible light holog.)
IT **52858-60-3**, Poly(tetrahydropyranyl methacrylate) 136902-35-7,
Poly(phenyl methacrylate-tetrahydropyranyl methacrylate)
(**photoresist** for holog. contg. binary acid generator system
and)
IT 20413-07-4 58109-40-3, Diphenyliodonium hexafluorophosphate
KATHLEEN FULLER EIC 1700 308-4290

(**photoresist** for holog. contg. tetrahydropyranyl methacrylate-Ph methacrylate copolymer and binary acid generator system contg.)

IT 52858-59-0P, Tetrahydropyranyl methacrylate
(prepn. and polymn. of., with Ph methacrylate, for prepn. of **photoresist** for holog.)

IT 52858-60-3, Poly(tetrahydropyranyl methacrylate)
(**photoresist** for holog. contg. binary acid generator system and)

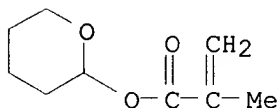
RN 52858-60-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
(9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

CMF C9 H14 O3



L23 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1994:120781 HCAPLUS

DN 120:120781

TI Positive **photoresist** compositions

IN Bauer, Richard D.; Chen, Gwendyline Y. Y.; Hamilton, William L.

PA du Pont de Nemours, E. I., and Co., USA

SO U.S., 7 pp. Cont. of U.S. Ser. No. 508,023, abandoned.
CODEN: USXXAM

DT Patent

LA English

IC ICM G03C001-492

NCL 430270000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5252427	A	19931012	US 1992-917924	19920721
PRAI	US 1990-508023		19900410		

AB The present invention provides an aq.-processable, pos.-working **photoresist** compn. having improved **photospeed** and aq. development rate without substantially reducing processing latitude in printed-circuit chemistries. The compns. contain (a) a polymeric material having a polymer backbone with pendant **acid labile** groups which are bound directly or indirectly to the polymer backbone, and free acid groups, wherein the polymeric material has an acid no. of .apprx.25 and is substantially insol. in 1% by wt. aq. Na carbonate soln. at 30.degree., and (b) a substance that forms an acid upon exposure to actinic radiation. The pos. **photoresists** of this invention may be used to prep. printed circuits, wherein the **photoresist** may be applied to the printed-circuit substrate as a liq. coating, as a solid dry film, or from an electrodeposition bath.

ST pos **photoresist** compn; printed circuit pos **photoresist** compn

IT **Resists**
(photo-, pos.-working, aq.-processable)

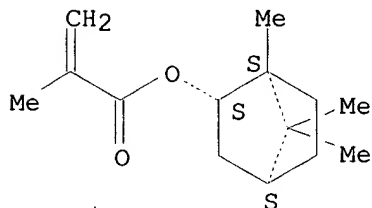
IT Electric circuits

KATHLEEN FULLER EIC 1700 308-4290

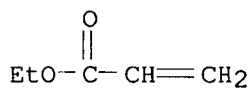
✓ Duplicate

(printed, pos. **photoresist** compns. for)
 IT 104558-94-3, Cyracure UVI 6974
 RL: TEM (Technical or engineered material use); USES (Uses)
 (**photoresist** compns. contg., for printed circuits)
 IT 99040-85-4 152914-12-0
 (**photoresists** contg., pos.-working, for printed circuits)
 IT 119-61-9, Benzophenone, uses 120-12-7, Anthracene, uses 129-00-0,
 Pyrene, uses 198-55-0, Perylene
 (sensitizer, **photoresist** compns. contg., for printed
 circuits)
 IT 99040-85-4
 (**photoresists** contg., pos.-working, for printed circuits)
 RN 99040-85-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with ethyl 2-propenoate and
 exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-methyl-2-propenoate (9CI)
 (CA INDEX NAME)
 CM 1
 CRN 7534-94-3
 CMF C14 H22 O2
 CDES 2:EXO

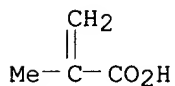
Relative stereochemistry.



CM 2
 CRN 140-88-5
 CMF C5 H8 O2



CM 3
 CRN 79-41-4
 CMF C4 H6 O2



L23 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2000 ACS
 AN 1993:637804 HCAPLUS
 DN 119:237804
 TI Advances in phototackification

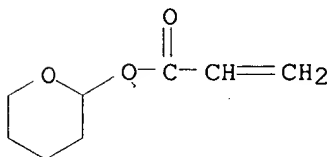
KATHLEEN FULLER EIC 1700 308-4290

AU Simmons, Howard E., III; Hertler, Walter R.
 CS Cent. Res. Dev., E.I. duPont de Nemours and Co., Wilmington, DE,
 19880-0328, USA
 SO Proc. SPIE-Int. Soc. Opt. Eng. (1993), 1912 (Color Hard Copy and Graphic
 Arts II), 362-72
 CODEN: PSISDG; ISSN: 0277-786X
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 36
 AB A direct single-layer neg.-working phototackification system with
 application to 4-color half-tone proofing has been invented. It makes use
 of chem. amplification and is based on photoinduced microphase sepn. in an
 initially non-tacky miscible blend of **acid-labile** and
 tacky polymers. Factors which influence tack generation will be
 discussed. The system has been sensitized both in the UV for conventional
 analog proofing and in the near-IR for digital proofing.
 ST phototackification photoinduced microphase sepn graphic arts;
photolithog photoresist photochem
 tackification arts proofing
 IT Graphic arts
 Tackifiers
 (advances in phototackification)
 IT Lithography
 (photo-, direct single-layer neg.-working phototackification system in)
 IT 110-87-2P, 3,4-Dihydro-2H-pyran 694-54-2P, Tetrahydro-2H-pyran-2-ol
 709-84-2P
 (formation of, in lithog. phototackification process)
 IT 132399-88-3
 (photoacid generator, in resist compn. for
phototackification system)
 IT 34558-43-5, Poly(2-phenylethyl acrylate) 52858-58-9,
 Poly(2-tetrahydropyranyl acrylate) 52858-60-3,
 Poly(2-tetrahydropyranyl methacrylate)
 (resist compn. contg., **phototackification** system
 using)
 IT 88878-49-3
 (sensitizer, in lithog. phototackification process)
 IT 52858-58-9, Poly(2-tetrahydropyranyl acrylate) 52858-60-3
 , Poly(2-tetrahydropyranyl methacrylate)
 (resist compn. contg., **phototackification** system
 using)
 RN 52858-58-9 HCAPLUS
 CN 2-Propenoic acid, tetrahydro-2H-pyran-2-yl ester, homopolymer (9CI) (CA
 INDEX NAME)

CM 1

CRN 52858-57-8

CMF C8 H12 O3



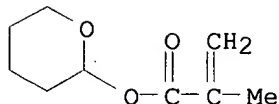
RN 52858-60-3 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
 (9CI) (CA INDEX NAME)

KATHLEEN FULLER EIC 1700 308-4290

CM 1

CRN 52858-59-0

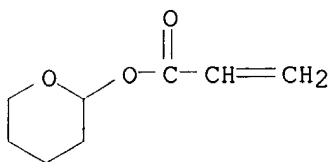
CMF C9 H14 O3



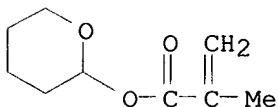
requested Lib. Loan
↓
Chkeo

- L23 ANSWER 21 OF 25 HCAPLUS COPYRIGHT 2000 ACS
 AN 1993:201864 HCAPLUS
 DN 118:201864
 TI Synthesis and applications of **acid-labile** acrylic polymers
 AU Hertler, W. R.; Sogah, D. Y.; Raymond, F. A.; Bauer, R. D.; Chang, C. T.; Taylor, G. N.; Stillwagon, L. E.
 CS Exp. Stn., Du Pont Co., Wilmington, DE, 19880-0328, USA
 SO Makromol. Chem., Macromol. Symp. (1992), 64 (International Symposium on New Polymers, 1991), 137-49
 CODEN: MCMSES; ISSN: 0258-0322
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 AB Acrylic and methacrylic acetal esters were synthesized by reaction of unsatd. carboxylic acids with vinyl ethers. The acetal esters were converted by radical polymn. and GTP to **acid-labile** homo- and copolymers. Coatings of these polymeric acetal esters contg. photosensitive acid-generating compds. are useful in image-formation through chem. amplification. Thus, poly(tetrahydropyranyl methacrylate-co-benzyl methacrylate) can be used in pos. working deep UV microlithog. Poly(tetrahydropyranyl acrylate), coated in a thin layer over a tacky elastomer, provides a high resoln., H2O-developable neg. working tonable compn. Several polymeric and nonpolymeric acetal esters can be used for pos. working electrostatic imaging through changes in elec. cond.
 ST **photoresist photoimaging** acrylic polymer
 IT Photoimaging compositions and processes
 (synthesis and applications of **acid-labile** acrylic polymers as)
 IT Printing, impact
 Printing plates
 (synthesis and applications of **acid-labile** acrylic polymers for)
 IT **Resists**
 (photo-, synthesis and applications of **acid-labile** acrylic polymers as)
 IT 119359-85-2
 (Lithog. characterization of, as pos.-working deep-UV **photoresists**)
 IT 6293-66-9, Diphenyliodonium tosylate 66003-78-9 114719-51-6, 2,6-Dinitrobenzyl tosylate
 (lithog. deep-UV pos.-working **photoresist** contg. poly(tetrahydropyranyl methacrylate-benzyl methacrylate) and)
 IT 52858-58-9 140715-20-4 140715-23-7
 147233-59-8
 (photoimaging compn. contg.)
 IT 71449-78-0 132399-88-3
 (photoimaging compn. contg. poly(benzyl methacrylate-tetrahydropyranyl
 KATHLEEN FULLER EIC 1700 308-4290

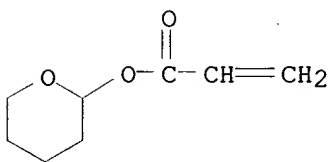
methacrylate) and)
 IT 52858-58-9 140715-20-4 140715-23-7
 147233-59-8
 (photoimaging compn. contg.)
 RN 52858-58-9 HCAPLUS
 CN 2-Propenoic acid, tetrahydro-2H-pyran-2-yl ester, ho
 CRN 52858-57-8
 CMF C8 H12 O3



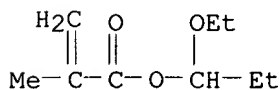
RN 140715-20-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with
 tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)
 CM 1
 CRN 52858-59-0
 CMF C9 H14 O3



CM 2
 CRN 52858-57-8
 CMF C8 H12 O3



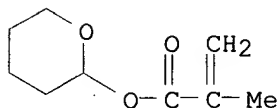
RN 140715-23-7 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 1-ethoxypropyl ester, polymer with
 tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)
 CM 1
 CRN 138554-08-2
 CMF C9 H16 O3



CM 2

CRN 52858-59-0

CMF C9 H14 O3



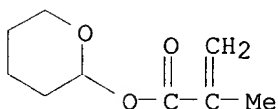
RN 147233-59-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with ethyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

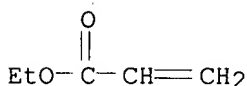
CMF C9 H14 O3



CM 2

CRN 140-88-5

CMF C5 H8 O2



L23 ANSWER 22 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1993:90622 HCAPLUS

DN 118:90622

TI A negative-working tonable photoimaging composition based on **acid-labile** acrylic polymers

AU Raymond, Floyd A.; Hertler, Walter R.

CS Du Pont Imaging Syst., Wilmington, DE, 19880-0352, USA

SO J. Imaging Sci. Technol. (1992), 36(3), 243-8

CODEN: JIMTE6

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB A photoimaging system is described in which a polymeric acetal ester and a photoacid generator are coated on top of a tacky elastomer. Upon imagewise exposure, followed by development with H₂O or dil. aq. base, the resulting tacky image can be toned. The best compn. with respect to **photospeed**, aq. developability, resolu., and **resistance** to stress cracking includes poly(tetrahydropyranyl acrylate) with 3-(9-anthryl)propyldiphenylsulfonium hexafluoroantimonate as the photosensitive acid generator. This compn. provides the basis for

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high-resoln. color proofing with good photospeed.

ST neg tonable photoimaging polyacrylate photoacid generator;
photoresist tonable polymeric acetal ester **photoacid**;
 printing color proofing photoimaging tonable compn

IT Printing, impact
 (color proofing in, photoimaging neg.-working tonable compn. based on
acid-labile acrylic polymers for)

IT Photoimaging compositions and processes
 (neg.-working tonable, based on **acid-labile** acrylic
 polymers coated on tacky elastomer)

IT Rubber, butadiene, uses
 (photoimaging neg.-working tonable compn. based on **acid-**
labile acrylic polymers coated on sublayer of)

IT Acrylic polymers, uses
 (photoimaging neg.-working tonable compns. based on **acid-**
labile)

IT Synthetic fibers, polymeric
 (butadiene-styrene rubbers, photoimaging neg.-working tonable compn.
 based on **acid-labile** acrylic polymers coated on
 sublayer of)

IT Rubber, synthetic
 (isoprene-styrene, block, triblock, photoimaging neg.-working tonable
 compn. based on **acid-labile** acrylic polymers coated
 on sublayer of)

IT **Resists**
 (photo-, neg.-working, tonable, based on polymeric acetal
 ester and photoacid generator coated on top of tacky elastomer)

IT 25068-25-1, Poly(1-octene)
 (photoimaging neg.-working tonable compn. based on **acid-**
labile acrylic polymers coated on sublayer of)

IT 104558-94-3, Cyracure UVI 6974 132399-88-3, 3-(9-
 Anthryl)propyldiphenylsulfonium hexafluoroantimonate
 (photoimaging system consisting of polymeric acetal ester and, as
 neg.-working tonable resist)

IT 52858-58-9P, Poly(2-tetrahydropyranyl acrylate)
 52858-60-3P, Poly(tetrahydropyranyl methacrylate)
 52858-64-7P 140715-20-4P 140715-21-5P,
 Poly(1-ethoxy-1-propyl methacrylate) 140715-22-6P, Poly(1-isobutoxy-1-
 ethyl methacrylate) 140715-23-7P 140715-24-8P
 RL: SPN (**Synthetic preparation**); PREP (**Preparation**)
 (prepn. and imaging characterization of, as neg.-working tonable
photoimaging resist contg. **photoacid**
 generator)

IT 52858-57-8P 138554-08-2P 138554-09-3P
 RL: RCT (**Reactant**); PREP (**Preparation**)
 (prepn. and polymn. of, for application as **photoimaging**
 neg.-working tonable **resist** compn. based on **photoacid**
 generator and)

IT 9003-17-2
 (rubber, photoimaging neg.-working tonable compn. based on **acid**
-labile acrylic polymers coated on sublayer of)

IT 52858-58-9P, Poly(2-tetrahydropyranyl acrylate)
 52858-60-3P, Poly(tetrahydropyranyl methacrylate)
 52858-64-7P 140715-20-4P 140715-23-7P
 140715-24-8P
 RL: SPN (**Synthetic preparation**); PREP (**Preparation**)
 (prepn. and imaging characterization of, as neg.-working tonable
photoimaging resist contg. **photoacid**
 generator)

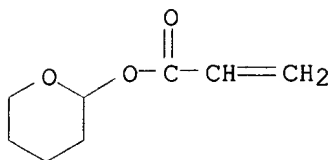
RN 52858-58-9 HCAPLUS

CN 2-Propenoic acid, tetrahydro-2H-pyran-2-yl ester, homopolymer (9CI) (CA
 INDEX NAME)

CM 1

KATHLEEN FULLER EIC 1700 308-4290

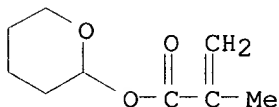
CRN 52858-57-8
CMF C8 H12 O3



RN 52858-60-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
(9CI) (CA INDEX NAME)

CM 1

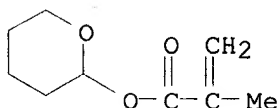
CRN 52858-59-0
CMF C9 H14 O3



RN 52858-64-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with
ethyl 2-propenoate (9CI) (CA INDEX NAME)

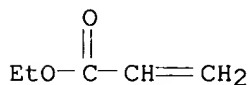
CM 1

CRN 52858-59-0
CMF C9 H14 O3



CM 2

CRN 140-88-5
CMF C5 H8 O2

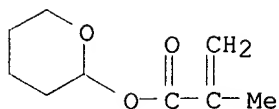


RN 140715-20-4 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with
tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

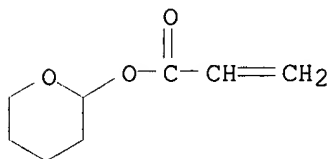
CMF C9 H14 O3



CM 2

CRN 52858-57-8

CMF C8 H12 O3



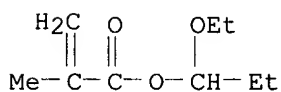
RN 140715-23-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethoxypropyl ester, polymer with tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 138554-08-2

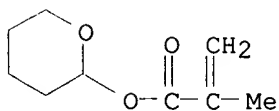
CMF C9 H16 O3



CM 2

CRN 52858-59-0

CMF C9 H14 O3



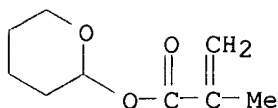
RN 140715-24-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-furanylmethyl ester, polymer with tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

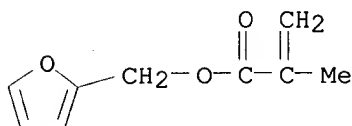
CMF C9 H14 O3



CM 2

CRN 3454-28-2

CMF C9 H10 O3



L23 ANSWER 23 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1992:204548 HCAPLUS

DN 116:204548

TI Positive working resist compositions and their utility in dry film
photoresistsIN Bauer, Richard Douglas; Chen, Gwendyline Yuan Yu; Hertler, Walter Raymond;
Wheland, Robert Clayton

PA du Pont de Nemours, E. I., and Co., USA

SO PCT Int. Appl., 55 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9115809	A1	19911017	WO 1991-US1069	19910225
	W: CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5077174	A	19911231	US 1990-507337	19900410
	CA 2080364	AA	19911011	CA 1991-2080364	19910225
	EP 524187	A1	19930127	EP 1991-904946	19910225
	EP 524187	B1	19960710		
	R: CH, DE, FR, GB, IT, LI, NL, SE				
	JP 05506106	T2	19930902	JP 1991-504731	19910225
	US 5145764	A	19920908	US 1991-757081	19910910
PRAI	US 1990-507337		19900410		
	WO 1991-US1069		19910225		

AB A dry film **photoresist** element is described comprising a thin flexible polymeric film support having adhered thereto with low to moderate adherence a solid photosensitive layer having a thickness of .gtorsim.8 .mu.m and comprising a polymer and a initiator system. The polymer is chosen from compns. having a polymer backbone and pendant **acid-labile** groups which are bound to the polymer backbone, where the **acid-labile** groups are -CO2C(R1)(OR2)CHR3R4 or -CO2(CH2)n-C6H4-OC(R1)(OR2)CHR3R4 [R1, R3, R4 = H, lower alkyl; R2 is lower alkyl; R1 and R2 or R1 and either R3 or R4, or R2 and either R3 or R4 may form a 5-, 6-, or 7-membered ring. The initiator system comprises an initiator or an initiator and .gtoreq.1 sensitizer

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that generates, upon exposure to actinic radiation of .apprx.3000-9000 .ANG. a catalytic amt. of a strong acid. The **photoresist** film is also developable by fully aq. methods. The film does not require post exposure to high temps. Processes of making **photoresist** on a surface are also claimed.

ST **photoresist** dry film polymer; pendant **acid labile** polymer; elec circuit resist compn

IT Electric circuits
(**photoresist** compn. for, polymer with pendant **acid-labile** group in)

IT **Resists**
(**photo-**, pos.-working, contg. polymer with pendant **acid-labile** group)

IT 1678-43-9, Benzoin tosylate 104558-94-3, Cyacure UVI 6974 132399-88-3 140713-69-5
(initiator, **photoresist** compn. contg.)

IT 25189-00-8P, tert-Butyl methacrylate polymer 25232-27-3P, tert-Butyl acrylate polymer **52858-60-3P** 119359-85-2DP, optionally carboxylic group-contg. 136750-62-4P **139989-52-9P** 139989-53-0P 140715-18-0P 140715-19-1P 140876-26-2DP, HRJ 1829, tetrahydropyranyl ether
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(prepn. and use of, in pos.-working resist compn.)

IT **52858-60-3P 139989-52-9P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(prepn. and use of, in pos.-working resist compn.)

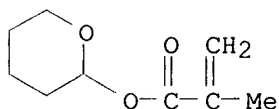
RN 52858-60-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

CMF C9 H14 O3



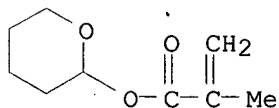
RN 139989-52-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

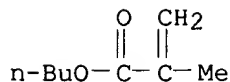
CMF C9 H14 O3



CM 2

CRN 97-88-1

CMF C8 H14 O2



L23 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2000 ACS

AN 1992:204547 HCAPLUS

DN 116:204547

TI Resist material for use in thick film resists

IN Bauer, Richard Douglas; Chen, Gwendyline Yuan Yu; Hertler, Walter Raymond; Wheland, Robert Clayton

PA du Pont de Nemours, E. I., and Co., USA

SO PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9115808	A1	19911017	WO 1991-US1068	19910225
	W: CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5120633	A	19920609	US 1990-508136	19900410
	EP 524250	A1	19930127	EP 1991-908013	19910225
	R: DE				
	JP 05506731	T2	19930930	JP 1991-507819	19910225
	US 5262281	A	19931116	US 1992-847645	19920310
PRAI	US 1990-508136		19900410		
	WO 1991-US1068		19910225		

AB A liq. resist compn. is described comprising a polymer, an initiator system, and a solvent. The polymer is chosen from compns. having a polymer backbone and pendant **acid-labile** groups which are bound to the polymer backbone, where the **acid-labile** groups are -CO₂C(R₁)(OR₂)CHR₃R₄ or -CO₂(CH₂)_n-C₆H₄-OC(R₁)(OR₂)CHR₃R₄ [R₁, R₃, R₄ = H, lower alkyl; R₂ is lower alkyl; R₁ and R₂ or R₁ and either R₃ or R₄, or R₂ and either R₃ or R₄ may form a 5-, 6-, or 7-membered ring]. The initiator system comprises an initiator or an initiator and .gtoreq.1 sensitizer that generates, upon exposure to actinic radiation of .apprx.3000-9000 .ANG., a catalytic amt. of a strong acid is preferably having pKa ltoreq. 2. The **photoresist** film is developable by fully aq. methods. The film does not require post exposure to high temps. Processes of making **photoresist** image on a surface are also claimed.

ST **photoresist acid labile** polymer; elec circuit resist

IT Electric circuits

(**photoresist** compn. for, polymer with pendant **acid-labile** group in)

IT Phenolic resins, uses

(novolak, with pendant **acid-labile** group, for **photoresists**)

IT **Resists**

(**photo-**, pos.-working, contg. polymer with pendant **acid-labile** group)

IT 119359-85-2P 136750-62-4P 139989-52-9P 140715-20-4P 140876-26-2DP, HRJ 1829, tetrahydropyranyl ether

RL: SPN (**Synthetic preparation**); PREP (**Preparation**)

(prepn. and use of, in pos.-working resist compn.)

KATHLEEN FULLER EIC 1700 308-4290

IT 139989-52-9P 140715-20-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use of, in pos.-working resist compn.)

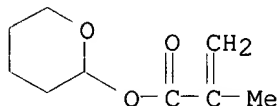
RN 139989-52-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with
tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

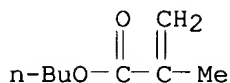
CMF C9 H14 O3



CM 2

CRN 97-88-1

CMF C8 H14 O2



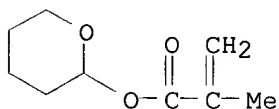
RN 140715-20-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with
tetrahydro-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

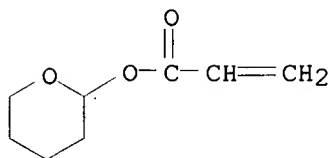
CMF C9 H14 O3



CM 2

CRN 52858-57-8

CMF C8 H12 O3

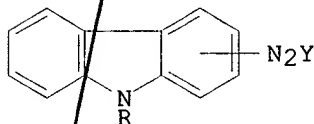


AN 1992:31434 HCAPLUS
 DN 116:31434
 TI Resist material with carbazole diazonium salt acid generator
 IN Anderson, Albert G.; Hertler, Walter R.; Wheland, Robert C.; Chen, Yuan Yu G.
 PA du Pont de Nemours, E. I., and Co., USA
 SO U.S., 7 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM G03C001-60
 NCL 430176000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4985332	A	19910115	US 1990-508134	19900410
	WO 9115807	A1	19911017	WO 1991-US1067	19910225
	W: CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5219711	A	19930615	US 1992-884021	19920518
PRAI	US 1990-508134		19900410		
	US 1990-591124		19901001		

GI



AB Excellent resoln. and sensitivity in the patterning of resists utilized in device and mask manuf. is obtained with compn. involving polymers having recurring pendant **acid labile** groups of the formula
 -CO2C(R1)(OR2)CHR3R4 on -CO2(CH2)nC6H4OC(R1)(OR2)CHR3R4, where n = 0-4; R1, R3, R4 = H on C1-6 alkyl; R2 = C1-6 alkyl; and R1 and R2, R1 and R3 on R4, on R2 and R3 on R4 may be joined to form a 5-, 6-, on 7-membered ring, and a material that forms an acid on irradiation, of the formula I, where N2Y is in the 1- or 3-position; Y = PF6-, AsF6-, SbF6-, FeCl4-, SnCl6-, SbCl6-, BF4-, or BiCl52-; and R = C1-16 alkyl, (un)substituted benzyl or Ph, or cycloalkyl.

ST **photoresist** carbazolediazonium salt acid generator; pendant **acid labile** group polymer **photoresist**

IT **Resists**

(photo-, from polymers having **acid labile** pendant groups and carbazole diazonium salt acid generators)

IT 136750-61-3P

RL: RCT (Reactant); PREP (Preparation)

(prepn. and polymn. of, in formation of **photoresist** compns.)

IT 106342-09-0P 136750-68-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and reaction of, in formation of polytetrahydropyranyloxybenzyl methacrylate for **photoresist** compns.)

IT 135783-82-3P

(prepn. of, as acid generator for **photoresist** compns.)

IT 52858-60-3P, Poly(tetrahydropyranyl methacrylate) 119359-85-2P
136750-62-4P

(prepn. of, for **photoresist** compns.)

IT 52858-60-3P, Poly(tetrahydropyranyl methacrylate)

KATHLEEN FULLER EIC 1700 308-4290

(prepn. of, for photoresist compns.)

RN 52858-60-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, homopolymer
(9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

CMF C9 H14 O3

